



**NONRESIDENT
TRAINING
COURSE**



May 2000

LITHOGRAPHER

NAVEDTRA 14293

Although the words “he,” “him,” and “his” are used sparingly in this course to enhance communication, they are not intended to be gender driven or to affront or discriminate against anyone.

PREFACE

This course is designed for Navy Lithographers. By enrolling in this self-study course, you have demonstrated a desire to improve yourself and the Navy. Remember, however, this self-study course is only one part of the total Navy training program. Practical experience, schools, selected reading, and your desire to succeed are also necessary to successfully round out a fully meaningful training program.

THE COURSE: This self-study course is organized into subject matter areas, each containing learning objectives to help you determine what you should learn along with text and illustrations to help you understand the information. The subject matter reflects day-to-day requirements and experiences of personnel in the rating or skill area. It also reflects guidance provided by Enlisted Community Managers (ECMs) and other senior personnel, technical references, instructions, etc., and either the occupational or naval standards, which are listed in the *Manual of Navy Enlisted Manpower Personnel Classifications and Occupational Standards*, NAVPERS 18068.

TEXTBOOK: The text for this course, *The Lithographers Manual*, 9th edition, is a commercial text that can be ordered from the following address:

Graphic Arts Technical Foundation
P.O. Box 1020
Sewickley, PA 15143-1020
Phone (U.S. and Canada): 800/662/-3916
Phone (all other countries): 412/741-5733
Fax: 412/741-0609
Email: gatforders@abdintl.com

THE QUESTIONS: The questions that appear in this course are designed to help you understand the material in the text.

VALUE: In completing this course, you will improve your military and professional knowledge. Importantly, it can also help you study for the Navy-wide advancement in rate examination. If you are studying and discover a reference in the text to another publication for further information, look it up.

*2000 Edition Prepared by
LIC John Diamante*

Published by
NAVAL EDUCATION AND TRAINING
PROFESSIONAL DEVELOPMENT
AND TECHNOLOGY CENTER

**NAVSUP Logistics Tracking Number
0504-LP-022-3840**

Sailor's Creed

“I am a United States Sailor.

I will support and defend the Constitution of the United States of America and I will obey the orders of those appointed over me.

I represent the fighting spirit of the Navy and those who have gone before me to defend freedom and democracy around the world.

I proudly serve my country's Navy combat team with honor, courage and commitment.

I am committed to excellence and the fair treatment of all.”

INSTRUCTIONS FOR TAKING THE COURSE

TEXTBOOK

The text for this course is *The Lithographers Manual*, 9th edition.

ASSIGNMENTS

The text pages that you are to study are listed at the beginning of each assignment. Study these pages carefully before attempting to answer the questions. Pay close attention to tables and illustrations and read the learning objectives. The learning objectives state what you should be able to do after studying the material. Answering the questions correctly helps you accomplish the objectives.

SELECTING YOUR ANSWERS

Read each question carefully, then select the BEST answer. You may refer freely to the text. The answers must be the result of your own work and decisions. You are prohibited from referring to or copying the answers of others and from giving answers to anyone else taking the course.

SUBMITTING YOUR ASSIGNMENTS

To have your assignments graded, you must be enrolled in the course with the Nonresident Training Course Administration Branch at the Naval Education and Training Professional Development and Technology Center (NETPDTC). Following enrollment, there are two ways of having your assignments graded: (1) use the Internet to submit your assignments as you complete them, or (2) send all the assignments at one time by mail to NETPDTC.

Grading on the Internet: Advantages to Internet grading are:

- you may submit your answers as soon as you complete an assignment, and
- you get your results faster; usually by the next working day (approximately 24 hours).

In addition to receiving grade results for each assignment, you will receive course completion confirmation once you have completed all the assignments. To submit your assignment answers via the Internet, go to:

<http://courses.cnet.navy.mil>

Grading by Mail: When you submit answer sheets by mail, send all of your assignments at one time. Do NOT submit individual answer sheets for grading. Mail all of your assignments in an envelope, which you either provide yourself or obtain from your nearest Educational Services Officer (ESO). Submit answer sheets to:

COMMANDING OFFICER
NETPDTC N331
6490 SAUFLEY FIELD ROAD
PENSACOLA FL 32559-5000

Answer Sheets: All courses include one “scannable” answer sheet for each assignment. These answer sheets are preprinted with your SSN, name, assignment number, and course number. Explanations for completing the answer sheets are on the answer sheet.

Do not use answer sheet reproductions: Use only the original answer sheets that we provide—reproductions will not work with our scanning equipment and cannot be processed. Follow the instructions for marking your answers on the answer sheet. Be sure that blocks 1, 2, and 3 are filled in correctly. This information is necessary for your course to be properly processed and for you to receive credit for your work.

COMPLETION TIME

Courses must be completed within 12 months from the date of enrollment. This includes time required to resubmit failed assignments.

PASS/FAIL ASSIGNMENT PROCEDURES

If your overall course score is 3.2 or higher, you will pass the course and will not be required to resubmit assignments. Once your assignments have been graded you will receive course completion confirmation.

If you receive less than a 3.2 on any assignment and your overall course score is below 3.2, you will be given the opportunity to resubmit failed assignments. **You may resubmit failed assignments only once.** Internet students will receive notification when they have failed an assignment--they may then resubmit failed assignments on the web site. Internet students may view and print results for failed assignments from the web site. Students who submit by mail will receive a failing result letter and a new answer sheet for resubmission of each failed assignment.

COMPLETION CONFIRMATION

After successfully completing this course, you will receive a letter of completion.

ERRATA

Errata are used to correct minor errors or delete obsolete information in a course. Errata may also be used to provide instructions to the student. If a course has an errata, it will be included as the first page(s) after the front cover. Errata for all courses can be accessed and viewed/downloaded at:

<http://www.advancement.cnet.navy.mil>

STUDENT FEEDBACK QUESTIONS

We value your suggestions, questions, and criticisms on our courses. If you would like to communicate with us regarding this course, we encourage you, if possible, to use e-mail. If you write or fax, please use a copy of the Student Comment form that follows this page.

For subject matter questions:

E-mail: n313.products@cnet.navy.mil
Phone: Comm: (850) 452-1648
DSN: 922-1648
FAX: (850) 452-1370
(Do not fax answer sheets.)
Address: COMMANDING OFFICER
NETPDTC (CODE N313)
6490 SAUFLEY FIELD ROAD
PENSACOLA FL 32509-5237

For enrollment, shipping, grading, or completion letter questions:

E-mail: fleetservices@cnet.navy.mil
Phone: Comm: (850) 452-1511/1181/1859
DSN: 922-1511/1181/1859
FAX: (850) 452-1370
(Do not fax answer sheets.)
Address: COMMANDING OFFICER
NETPDTC (CODE N331)
6490 SAUFLEY FIELD ROAD
PENSACOLA FL 32559-5000

NAVAL RESERVE RETIREMENT CREDIT

If you are a member of the Naval Reserve, you will receive retirement points if you are authorized to receive them under current directives governing retirement of Naval Reserve personnel. For Naval Reserve retirement, this course is evaluated at 5 points. (Refer to *Administrative Procedures for Naval Reservists on Inactive Duty*, BUPERSINST 1001.39, for more information about retirement points.)

COURSE OBJECTIVES

In completing this nonresident training course, you will demonstrate a knowledge of the subject matter by correctly answering questions on the following subjects: the lithographic process; planning and control; type and typographic; art and copy preparation; basic camera operation; color separation and correction; film image assembly; proofing; platemaking; electronic prepress production; ink; paper; presswork and finishing.

Student Comments

Course Title: Lithographer

NAVEDTRA: 14293 **Date:** _____

We need some information about you:

Rate/Rank and Name: _____ SSN: _____ Command/Unit _____

Street Address: _____ City: _____ State/FPO: _____ Zip _____

Your comments, suggestions, etc.:

<p>Privacy Act Statement: Under authority of Title 5, USC 301, information regarding your military status is requested in processing your comments and in preparing a reply. This information will not be divulged without written authorization to anyone other than those within DOD for official use in determining performance.</p>
--

NETPDTC 1550/41 (Rev 4-00)

ASSIGNMENT 1

Textbook Assignment: “The Lithographic Process,” chapter 3, pages 3:1 through 3:7; “Planning and Control,” chapter 4, pages 4:1 through 4:16; “Type and Typography,” chapter 5, pages 5:1 through 5:26; “Art and Copy Preparation,” chapter 6, pages 6:1 through 6:40; “Electronic Prepress Production,” chapter 12, pages 12:1 through 12:35.

Learning Objective: Identify the steps in the lithographic process and the requirements in shop layout and quality control.

- 1-1. What is the first step in the graphic reproduction process?
1. Gathering materials
 2. Getting the material into printable form
 3. Selecting the text
 4. Selecting the graphics
- 1-2. What is the second step in the graphic reproduction process?
1. Cropping illustrations
 2. Enlarging the printed material
 3. Typesetting the text
 4. Making an image carrier
- 1-3. What is the final step in the graphic reproduction process?
1. Printing and finishing
 2. Transferring images to paper
 3. Folding and binding
 4. Both 2 and 3 above
- 1-4. What printing process carries images in the ink-holding indentations cut into the body of the carrier?
1. Letterpress
 2. Gravure
 3. Screen printing
 4. Lithographic
- 1-5. From a historical perspective, what printing process was badly limited in picture reproduction, but excellent for printing text?
1. Letterpress
 2. Gravure
 3. Screen printing
 4. Lithographic
- 1-6. The basic concept of printing is based on what principle?
1. That plates are exposed through image films
 2. That oil and water resist mixing
 3. That image areas do not accept printing ink
 4. That image and nonimage areas react the same
- 1-7. What is a major advantage of offset printing over direct printing?
1. A right-reading image
 2. Finer detail printing on coarse or structured paper
 3. The blanket is gentle on the plate image
 4. Each of the above
- 1-8. Which of the following is a phase of the modern lithographic printing process?
1. Automatically merged operations
 2. Integrated prepress operations
 3. Bindery functions
 4. Finishing

- 1-9. Which of the following is a main part of art and copy preparation?
1. Manuscript preparation
 2. Putting artwork into a reproducible form
 3. Putting rough artwork into finished form
 4. Both 2 and 3 above
- 1-10. What is the first principle of good plant layout?
1. Separation of office and manufacturing functions
 2. Adapt the workflow to the existing or new building
 3. Direct product flow
 4. Ensure quality control
- 1-11. For plant layout, prepress areas should provide which of the following environments?
1. Clean, though noisy, and with low ceilings
 2. Clean and quiet
 3. Large, noisy, and with high ceilings
 4. Either 1 or 3 above, depending on product flow
- 1-12. In estimating a job's cost, which of the following steps should be taken?
1. Analyze the job's specifications
 2. Decide which parts are to be done electronically
 3. Assign costs to each part of the job
 4. Each of the above
- 1-13. In estimating composition job costs, a major element is knowing the condition of the copy to be composed.
1. True
 2. False
- 1-14. In selecting the optimum job design, the estimator should strive to perform which of the following functions?
1. Add extras to increase customer costs
 2. Encourage frills to maximize costs
 3. Gang up jobs for press economy
 4. Minimize inquiries about job specifications
- 1-15. The volume of work produced in a given shop in a specified period of time is the definition of which of the following terms?
1. Job production
 2. Throughput
 3. Production optimization
 4. Output
- 1-16. What is the overall purpose of planning and scheduling operations?
1. To effectively manage the independent printing operations
 2. To ensure strict adherence to production schedules
 3. To produce the greatest volume of work at the lowest cost
 4. To reduce labor, overtime, and other production costs
- 1-17. Which of the following is a technique to improve planning and scheduling efficiency?
1. Keep presses off line until needed
 2. Ensure bindery operations are frequently adjusted during each job
 3. Perform dark color jobs first to decrease washup time
 4. Group similar jobs together to improve runnability

- 1-18. Which of the following is an essential and important aspect of quality control activities?
1. Build quality into the product
 2. Inspect to remove unsatisfactory items in the product
 3. Both 1 and 2 above
 4. Standardize all processes

- 1-19. Which of the following is a type of quality control unique to the printing industry?
1. Production overlap
 2. Test image
 3. Proofreading
 4. Random inspections

Learning Objective: Identify type styles and characteristics, the various elements of typography, and the principles of design and placement.

- 1-20. The process of assembling types into words and lines is the definition of which of the following terms?
1. Typefacing
 2. Typesetting
 3. Imagesetting
 4. Both 2 and 3 above

- 1-21. The first modern type designs were developed by what individual?
1. Baskerville
 2. Bodoni
 3. Garamond
 4. Caslon

- 1-22. As an element of design, the process of reducing the space between letters is known by what term?
1. Kerning
 2. Ligature
 3. Body typing
 4. Typefacing

- 1-23. For type characters, x-height is the portion of a letter between which of the following points?
1. The baseline and a counter
 2. An ascender and a descender
 3. The cap height and the baseline
 4. A counter and an ascender

- 1-24. A type family usually consists of which of the following typeface variations?
1. Regular roman and bold italic
 2. Bold roman and regular italic
 3. Both 1 and 2 above
 4. Regular roman and regular italic only

- 1-25. A font of type commonly contains which of the following characters?
1. Capital letters, lowercase letters, numerals, italic figures, and a pi font
 2. Upper and lowercase letters, a pi font, and special characters
 3. A main font, a pi font, italic figures, and ligatures
 4. Each of the above, without italic figures

- 1-26. In a type series, increments of 4 to 128 points generally define the size range of what term?
1. A series
 2. The type font
 3. Imagesetting
 4. Both 2 and 3 above

1-27. In the point system, there are what total number of points in an 18-pica line?

1. 72
2. 108
3. 216
4. 432

1-28. Line lengths that are adjusted to form the shape of an object or to frame a graphic illustration are known as what type of copy?

1. H&J
2. Specimen type
3. Running center
4. Runaround

1-29. In word spacing, excessive and unsightly spacing between words may be the result of equipment set to operate in which of the following modes?

1. Leading
2. Hyphenless
3. Centered
4. Justified

1-30. In spacing, what term or terms identify the process of adding or removing space between letters?

1. Positive kerning or letterspacing
2. Tracking or kerning
3. Negative kerning
4. Each of the above

1-31. As an input device for phototypesetting, an OCR performs which of the following functions?

1. Merges text with graphics
2. Previews typefaces
3. Scans page makeup
4. Reads images for disk storage

Learning Objective: Recognize the various proofreaders' marks used, and the procedures practiced when proofreading and correcting copy.

1-32. The procedures for proofreading a typeset proof include which of the following necessary steps?

1. Read to detect mechanical and human error
2. Read to ensure correct revisions and placement
3. Both 1 and 2 above
4. Conduct additional revisions as necessary

1-33. For making computer assisted corrections to proofread text, which of the following pieces of equipment is an input device?

1. Screen
2. Document File
3. Mouse
4. Cursor

A	G	M
B	H	N
C	I	O
D	J	P
E	K	Q
F	L	

Figure 1A.—Proofreaders' Marks

IN ANSWERING QUESTIONS 1-34 AND 1-35, SELECT FROM FIGURE 1A THE PROOFREADERS' MARK OR MARKS NEEDED TO CORRECT THE ERROR(S) IN THE SENTENCE USED AS THE QUESTION. ALL MARKS MAY NOT BE USED. SOME MARKS MAY BE USED MORE THAN ONCE.

1-34. Positive halftone prints (also called Prescreened halftones) are photographic paper prints made made halftone negatives. For more information refer to *the Lithographers Manual*.

1. J, H, H, O, G
2. H, O, H, G
3. J, H, O, H, G, F
4. H, H, O, G, F

1-35. The range of colors any of set process inks can produce, and the amount of color correction they will require can be judged from simple calculations.

1. M, O, A, Q
2. H, O, A, H
3. M, H, O, B, Q
4. H, O, P, B

1-36. In proofreading, the most common method(s) for correcting typesetting errors is/are to perform which of the following actions?

1. Rekey the lines and typeset a new galley
2. Correct the existing computer file and print a new galley
3. Make line corrections and pasteup the original galley
4. Either 1 or 3 above, depending on the system

Learning Objective: Identify types of reproduction artwork and recall the procedures used in their preparation.

1-37. During the conception and design phases, which of the following operations is of critical importance to those people responsible for organizing the job?

1. Pasting up elements
2. Scheduling
3. Planning
4. Graphics communications

1-38. Which of the following elements are important to consider in the initial job consultations?

1. Style and format
2. Purpose of the job
3. Required colors
4. Each of the above

1-39. In jobs where a large number of sheets of paper are bound together, an artist must compensate for what potential problem?

1. Bindery offset
2. Page creep
3. Image mismatch
4. Sheetwise imposition

- 1-40. In planning the layouts leading to art preparation, which type of layout features roughly sketched and recognizable illustrations?
1. Rough
 2. Thumbnail
 3. Comprehensive
 4. Either 1 or 2, above, depending on the visual limitations of the job
- 1-41. In preparing a comp layout, the artist should place directions and specifications directly on the layout for the convenience of the artist.
1. True
 2. False
- 1-42. What type of copy may be a painting, a color photograph, or a transparency?
1. Full color
 2. Line
 3. Continuous tone
 4. Either 1 or 3 above, depending on the reproduction techniques to be used
- 1-43. When submitted for reproduction, what type of paper surface is required to produce clean and uniform lines and edges of manually created line copy?
1. Smooth and hard
 2. Hard and textured
 3. Soft and pebble-grained
 4. Smooth and absorbent
- 1-44. What size range is recommended for originals to minimize imperfections when creating line art for conventional offset reproduction?
1. 50% - 74%
 2. 75% - 99%
 3. 100% - 124%
 4. 125% - 150%
- 1-45. When using solid and reverse-type images in line copy, an artist should remember which of the following as a problem area?
1. Typefaces of uniform thickness
 2. Typefaces with fine-line serifs
 3. Reversed type of 12 point or above
 4. Opaque inks
- 1-46. Which of the following is an example of continuous-tone copy?
1. A painting
 2. A black and white photograph
 3. Both 1 and 2 above
 4. A pen and ink illustration
- 1-47. In photography, what process provides the best contrast control?
1. Compensating the contrast during negative to positive printing
 2. Exposing the subject to flat, front flash-on-camera lighting
 3. Exposing the subject to side lighting from a single source
 4. Lighting of the subject properly during photographing
- 1-48. To protect continuous-tone copy from damage, you should perform which of the following actions?
1. Mail photos in tubes
 2. Write protective instructions on the back of each photo
 3. Do not eat, drink, or smoke around the artwork
 4. Always write on photos with a pencil, never use a pen
- 1-49. What type of halftone is popular in portrait photography?
1. Combination
 2. Positive
 3. Vignette
 4. Outline

- 1-50. Unless rescreened or interference filtered during processing, what type of halftone is likely to be spoiled by the presence of moiré patterns in the final print?
1. Printed
 2. Square-finish
 3. Silhouette
 4. Positive
- 1-51. In scaling camera ready copy, you should remember which of the following rules?
1. Artwork is often scaled but never cropped
 2. Always mark scaling lines directly on the camera ready copy
 3. Draw lines on a covering tissue using a felt tip pen
 4. Always place scale marks in the area to be printed
- 1-52. In scaling, calculating the reproduction percentage of camera ready copy, using a calculator, the final number of 80 indicates the original will be processed in what way?
1. Enlarged by 80 percent
 2. Enlarged horizontally 10 percent and vertically 10 percent
 3. Reduced 20 percent
 4. Reduced horizontally 40 percent and vertically 40 percent
- 1-53. In completing a pasteup, the artist pastes which of the following line-copy elements following the comprehensive?
1. Continuous-tone copy
 2. Line drawings
 3. Type drawings
 4. Both 2 and 3 above
- 1-54. Which of the following marks are guidelines for the pasteup process?
1. Center-of-image
 2. Fold
 3. Crop or trim
 4. Each of the above
- 1-55. Overlays are used for which of the following purposes?
1. To add permanent color to a mechanical
 2. To indicate fold marks on a pasteup
 3. To assist in keylining camera-ready art
 4. To create a rainbow effect on key art
- 1-56. In accurately combining or positioning images, what type of register joins two colors with no perceptible color overlap?
1. Loose
 2. Hairline
 3. No
 4. Lap
- 1-57. What type of color reproduction produces an illusion that more exists in the reproduction than existed in the original?
1. Full-color copy
 2. Duotone
 3. Fake duotone
 4. Either 1 or 2 above, depending on the development procedure used
- 1-58. To satisfactorily reproduce most types of original full-color copy, which of the following process colors should be used?
1. Cyan, magenta, black, white
 2. Magenta, black, yellow, blue
 3. Yellow, magenta, cyan, black
 4. Blue, black, yellow, white

1-59. To review and evaluate transmission and reflection copy, what standard illumination temperature should be used?

1. 1,000K
2. 2,500K
3. 5,000K
4. 6,500K

1-60. In handling full-color copy, you should write the job number directly on what area of color prints?

1. Front margin (image area)
2. Front margin (nonimage area)
3. Back on masking tape
4. Either 2 or 3 above, depending on the circumstances

1-61. Which of the following patterns have a high incidence of producing moiré?

1. Window screens
2. Small checked patterns
3. Wallpaper
4. Each of the above

1-62. The quality of a color reproduction to the customer is largely the result of what factor?

1. Unnoticed colors
2. Time of day
3. Personal taste
4. Color harmony

1-63. The most pleasing color photographs are usually those having what characteristic?

1. A limited range of colors
2. Saturated colors
3. Large areas of solid, brilliant colors
4. Bold contrasts

Learning Objective: Recognize the equipment and software used to create documents and electronic files for reproduction.

1-64. Which of the following is a benefit of desktop publishing?

1. Quick revision of information
2. Reduced production costs
3. 1 and 2 above
4. Reduced rekeyboarding time

1-65. Word processing applications offer which of the following features?

1. Text scanning
2. Proofreading
3. Design selection
4. Spell checking

1-66. In using a computer to design a rough layout, the designer's goal is to create a simple layout to help visualize the final printed product.

1. True
2. False

1-67. What are the two types of computer programs for creating illustrations?

1. Draw and vector
2. Paint and postscript
3. Paint and draw
4. Vector and postscript

1-68. Which of the following is a purpose of desktop scanning?

1. To digitize images for later use
2. To crop images
3. To lighten or darken images
4. Each of the above

- 1-69. Which of the following file formats is most widely used to save gray-scale images?
1. TIFF
 2. RIFF
 3. EPSF
 4. Either 2 or 3 above, depending on the system used
- 1-70. In producing digital halftones, scanning a 150 lines per inch image should be conducted at what dpi setting?
1. 150
 2. 200
 3. 300
 4. 600
- 1-71. Which of the following is a device a computer uses for storing information?
1. Floppy disk
 2. Hard disk
 3. 1 and 2 above
 4. Keyboard
- 1-72. What is a principal benefit of networking computers?
1. Sharing resources
 2. Reducing dependence on coaxial cable
 3. Reducing dependence on optical fiber cable
 4. Both 2 and 3 above
- 1-73. What type of network should be in use on a ship that has all or most of the command's computers connected?
1. WAN
 2. LAN
 3. Node
 4. Optical
- 1-74. What device connects different types of networks?
1. Network bridge
 2. Modem
 3. Gateway
 4. Router
- 1-75. In scanning, what graphics system creates high-resolution artwork?
1. OCR
 2. Post Script
 3. Modulated
 4. Demodulated

ASSIGNMENT 2

Textbook Assignment: “Basic Camera Operation,” chapter 7, pages 7:1 through 7:46; “Color Separation and Correction,” chapter 8, pages 8:1 through 8:36; “Proofing,” chapter 10, pages 10:1 through 10:15.

Learning Objective: Identify the characteristics of film emulsions and distinguish between the type of exposures and the procedures for producing line and halftone negatives.

- 2-1. What procedure is used when the camera operator converts original photographic materials into enlarged or reduced intermediate images to be used in producing printing plates?
1. Offset lithography
 2. Reproduction photography
 3. Film processing
 4. Halftone reproduction
- 2-2. What term best describes images in which the tonal gradations of a continuous tone original are represented by a pattern of fine marks?
1. Film positive
 2. Contact negatives
 3. Duotones
 4. Halftones
- 2-3. Images created by reproduction photography are best referred to by which of the following terms?
1. Negatives
 2. Positives
 3. Both 1 and 2 above
 4. None of the above
- 2-4. Line copy, typed matter, and drawings are reproduced just the same as continuous-tone images.
1. True
 2. False
- 2-5. What is the key to the photographic process?
1. Film
 2. Light
 3. Temperature
 4. Chemicals
- 2-6. What term is used to best describe light traveling in a straight line in a uniform medium?
1. Beam
 2. Ray
 3. Point
 4. Wave
- 2-7. What is a shaft of light with nearly parallel rays called?
1. Beam
 2. Ray
 3. Point
 4. Wave

- | |
|--|
| <ul style="list-style-type: none"> A. Opaque B. Opalescent C. Translucent D. Transparent |
|--|

Figure 2A.—Object characteristics.

IN ANSWERING QUESTIONS 2-8 THROUGH 2-11, SELECT FROM FIGURE 2A THE LIGHT PASSING CHARACTERISTIC OF THE SUBSTANCE LISTED AS THE QUESTION. CHARACTERISTICS MAY BE USED MORE THAN ONCE OR NOT AT ALL.

- 2-8. Frosted glass.
- 1. A
 - 2. B
 - 3. C
 - 4. D
- 2-9. Wood.
- 1. A
 - 2. B
 - 3. C
 - 4. D
- 2-10. Clear glass.
- 1. A
 - 2. B
 - 3. C
 - 4. D
- 2-11. Waxed paper.
- 1. A
 - 2. B
 - 3. C
 - 4. D
- 2-12. What is the term used to describe a ray of light that is reflected from a smooth surface?
- 1. Specular
 - 2. Diffused
 - 3. Refracted
 - 4. Incident
- 2-13. The lights on a copy camera should be set at what angle so the glare level will be the lowest?
- 1. 30°
 - 2. 45°
 - 3. 60°
 - 4. 75°
- 2-14. What occurs when a ray of light is bent as it passes at an angle from one medium to another?
- 1. Concaving
 - 2. Convexing
 - 3. Reflection
 - 4. Refraction
- 2-15. Which type of lens is manufactured with both sides curving outward and the center being thicker than the edges?
- 1. Double-concave
 - 2. Double-convex
 - 3. Concave-convex
 - 4. Convex-concave
- 2-16. What device enables photographers to numerically measure the density of a black and white or color tone area on transparent or opaque materials?
- 1. Digital scanner
 - 2. Porosimeter
 - 3. Densitometer
 - 4. Spectrophotometer

- 2-17. Light affects which of the following components of photographic materials?
1. The gelatin
 2. The dyes
 3. The silver salts
 4. The metallic silver
- 2-18. When you place exposed film in developing solution, what happens to the silver salts?
1. They turn into a semisolid gelatin
 2. They turn transparent
 3. They turn into black metallic silver
 4. They dissolve
- 2-19. Hypo is used in the fixer for which of the following reasons?
1. To dissolve the silver halides
 2. To harden the film emulsion
 3. To stop the developing process
 4. To reduce the contamination of the fixer
- 2-20. A graphic arts camera consists of which of the following three planes?
1. Lens plane, focal plane, and film plane
 2. Focal plane, copy plane, and lens plane
 3. Copy plane, lamp plane, and focal plane
 4. Lens plane, exposure plane, and lamp plane
- 2-21. If a graphic arts camera is out of focus and the copyboard is fixed, you should focus it by moving what component(s)?
1. The film holder
 2. The lens board
 3. Both 1 and 2 above
 4. The lamps
- 2-22. Assume that a graphic arts camera is set for a same size shot. What would happen to the image if the distance between the lens board and the film holder were decreased?
1. It would be enlarged
 2. It would be reduced
 3. It would be focused
 4. It would be unchanged
- 2-23. The ground glass serves which of the following purposes?
1. To protect the film from dust
 2. To provide a flat surface for the film holder
 3. To transfer the image to the film
 4. To aid in focusing the camera
- 2-24. The light tunnel from the lens to the back of the camera is best known by which of the following terms?
1. Accordion
 2. Lens barrel
 3. Bellows
 4. Camera extension
- 2-25. When either the vertical or horizontal lines of an image are blurred, which of the following lens aberrations could result?
1. Chromatic
 2. Distortion
 3. Spherical
 4. Astigmatism
- 2-26. What type of lens aberration could result when the light rays passing through the outer edges of a lens focus on a different plane from those passing through the center?
1. Spherical
 2. Coma
 3. Astigmatism
 4. Distortion

- 2-27. Filters are used with the graphic arts camera to alter colors, separate colors, and change the intensity of light.
1. True
 2. False
- 2-28. The light gray areas of a black-and-white photograph are best known by what term?
1. Shadows
 2. Midtones
 3. Highlights
 4. Details
- 2-29. What area of a photograph being used to create a halftone reflects the least amount of light?
1. Shadows
 2. Midtones
 3. Highlights
 4. Details
- 2-30. A halftone screen should be placed in what relationship to the film?
1. Emulsion of the film to the emulsion of the screen
 2. Emulsions of the screen and film face the vacuum back
 3. Emulsion of the film faces the vacuum back and the emulsion of the screen faces the lens
 4. Emulsions of the film and screen face the lens
- 2-31. When you are making a halftone negative using more than one exposure, what exposure may NOT be necessary if sufficient contrast can be obtained?
1. Middletone
 2. Highlight
 3. Detail
 4. Flash
- 2-32. In a multiple exposure, the density of the dots in the shadow areas is increased by which of the following exposures?
1. Flash
 2. Middletone
 3. Highlight
 4. Detail
- 2-33. What area of a halftone negative contains positive dots in the range of 8-10%?
1. The midtone area
 2. The shadow area
 3. The highlight area
 4. The detail area
- 2-34. What area of a halftone negative can minor changes in exposure and development lead to considerable changes in results of the reproduction?
1. The midtone area
 2. The shadow area
 3. The highlight area
 4. The detail area
- 2-35. The area of a negative that will print as black solids is what size dot?
1. 90 percent highlight
 2. 80 percent highlight
 3. 20 percent shadow
 4. 10 percent shadow

Learning Objective: Identify the characteristics of light and color and their application in color reproduction.

2-36. The longest lightwaves the human eye can see come from which of the following light colors?

1. Yellow
2. Green
3. Red
4. Violet

2-37. When all light wavelengths of the visible spectrum are present in equal proportions, what color is produced?

1. Black
2. White
3. Brown
4. Gray

2-38. What are the primary colors of the additive color reproduction process?

1. Yellow, red, and black
2. Red, green, and blue
3. Green, blue, and yellow
4. Black, green, and blue

2-39. What are the primary colors of the subtractive process?

1. Yellow, process red, and process green
2. Black, magenta, and process blue
3. Cyan, magenta, and yellow
4. Process red, yellow, and magenta

2-40. When mixing offset ink, you should use what color combination to produce green?

1. Yellow and cyan
2. Magenta and yellow
3. Cyan and magenta
4. Red and blue

2-41. What term refers to the name of a color?

1. Hue
2. Value
3. Chroma
4. Saturation

2-42. What term refers to how strong something is colored?

1. Density
2. Value
3. Brightness
4. Saturation

2-43. What term refers to the intensity of light reflected from or transmitted by a colored object?

1. Hue
2. Chroma
3. Brightness
4. Saturation

Learning Objective: Recall the procedures for color evaluation and adjusting using the color reproduction requirements.

2-44. What is the order that the color reproduction requirements should be addressed to achieve the best reproduction results?

1. Tone reproduction, gray balance, and color correction
2. Color correction, gray balance, and tone reproduction
3. Color correction, tone reproduction, and gray balance
4. Gray balance, tone reproduction, and color correction

- 2-45. What color of ideal quality ink printed on paper would allow all of the green and blue light wavelengths to reflect back to the eye, but none of the red wavelengths?
1. Black
 2. Cyan
 3. Yellow
 4. Magenta
- 2-46. What acronym refers to the process of reducing the amount of cyan, magenta, and yellow printed in dark neutral areas, and replacing it with black?
1. UCR
 2. RGC
 3. CMY
 4. CRB
- 2-47. A shadow area consists of 70% yellow, 80% magenta, 70% cyan, and 90% black. What is the maximum amount of color that should be reduced and replaced with black?
1. 10%
 2. 15%
 3. 20%
 4. 25%
- 2-48. The procedure of substituting black for gray components throughout a reproduction including color areas is best known by what acronym?
1. RCC
 2. GPS
 3. RUC
 4. GCR
- 2-49. What process can be used to make the details of an original copy scan look sharper?
1. Using noise filter
 2. Using dust and scratches filter
 3. Using unsharp masking
 4. Using undercolor addition
-
- Learning Objective: Recall the purpose and principles of proofing operations.
-
- 2-50. What is the main purpose(s) of proofing a print job?
1. Checking for accuracy
 2. Checking appearance of job before final run
 3. Both 1 and 2 above
 4. To get the customers go ahead for the job
- 2-51. The printing of each sheet in the same position relative to the lead edge and the side guides is best referred to by what term?
1. Fit
 2. Imposition
 3. Register
 4. Alignment
- 2-52. How many components establish the visual perception of a person?
1. One
 2. Two
 3. Three
 4. Four
- 2-53. The graphic arts industry has set the standard lighting temperature at what rating for accurately viewing and evaluation of color printing?
1. 3,500 Kelvin
 2. 4,000 Kelvin
 3. 4,500 Kelvin
 4. 5,000 Kelvin

ASSIGNMENT 3

Textbook Assignment: “Film Image Assembly,” chapter 9, pages 9:1 through 9:24; “Platemaking,” chapter 11, pages 11:1 through 11:24; “Ink,” chapter 13, pages 13:1 through 13:21; “Paper,” chapter 14, pages 14:1 through 14:47; “Presswork,” chapter 15, pages 15:1 through 15:34; “Binding and Finishing,” chapter 16, pages 16:1 through 16:12.

Learning Objective: Identify the procedures used to prepare and correct film that is to be used in making lithographic plates.

3-1. What is the procedure of assembling film images commonly called?

1. Stripping
2. Film construction
3. Film arrangement
4. Image imposition

3-2. What are you creating when attaching negatives in their proper order to an opaque paper or plastic base?

1. Frame
2. Mask
3. Flat
4. Layout

3-3. What method involves exposing multiple images from a single film onto a plate?

1. Pin and tab
2. Double burn
3. Work and turn
4. Step and repeat

3-4. Which of the following groups contain items used for film image assembly?

1. T square, single-edge razor blade, masking tape
2. Opaque, register pins, lithographic needles
3. Straightedge, scissors, plate gauge
4. Ruler, rotary cutter, scribe

3-5. Goldenrod paper acts as a support for the negative and serves what other purpose?

1. A guide for opaquing
2. A straightedge for engraving
3. A mask for the non-image areas
4. A guide for ruling lines

3-6. Which of the following is NOT a standard reproduction layout?

1. Work-and-turn
2. Work-and-flop
3. Two-side combination
4. Sheetwise

3-7. Which of the following situations would prevent you from making a “gang” layout?

1. A number of unrelated jobs
2. Jobs of different sizes
3. Jobs that cannot be cut out of a sheet properly
4. One of the jobs must be run two-up

- 3-8. What is the main difference between work-and-turn and work-and-tumble impositions?
1. The size of the type used
 2. The width of the lead edge margin
 3. The speed of the press sheet reversal
 4. The manner in which the negatives are stripped
- 3-9. What flat material is the least durable, and not as suitable for jobs that will be handled repeatedly?
1. Goldenrod
 2. Orange vinyl
 3. Peelable masking film
 4. Clear polyester
- 3-10. The guidelines on the goldenrod are used in the stripping procedure for what purpose?
1. To position the negatives
 2. To line up the offset printing plates
 3. To expose the plate through the negatives
 4. To cut the film to fill the opening in the paper
- 3-11. What is the least amount of density reading the black area of a negative should have?
1. 2.0
 2. 2.5
 3. 3.0
 4. 3.5
- 3-12. The process in which a lightproof coating is applied to a negative to make corrections is known by what term?
1. Fixing
 2. Intensifying
 3. Opaquing
 4. Highlighting
- 3-13. How are unwanted specks on a positive flat eliminated?
1. Cover them with red litho tape
 2. Spot them out with opaque
 3. Cover them with goldenrod
 4. Scrape them off the emulsion side of the film
- 3-14. A film positive of lettering is necessary for which of the following effects in printing?
1. Surprinting
 2. Reverse lettering
 3. Inserting
 4. Step-and-repeat work
- 3-15. When you are preparing flats, the tab and pin system has what purpose?
1. To splice negatives together
 2. To indicate trim margins
 3. To show alignment of imposition charts
 4. To obtain close registration
- 3-16. The printing of nonprocess color inks to selected areas falls into what category of multicolor printing?
1. Full color
 2. Spot color
 3. Fake color
 4. Screen color
- 3-17. What number of different levels of register accuracy is there when combining two or more colors?
1. One
 2. Two
 3. Three
 4. Four

Learning Objective: Identify the types and characteristics of lithographic plates and recall the processes used to expose and develop them.

3-18. The three basic types of photolithographic plates are identified by which of the following terms?

1. Metal, Plastic, Paper
2. Light-sensitive, contact, electrostatic
3. Surface, deep-etched, relief
4. Emulsion, photopolymer, electrostatic

3-19. What type of lithographic plate has a coating that is soluble in a solvent, such as water, before exposure but becomes polymerized after exposure to light in the platemaking process?

1. A positive-working plate
2. A negative-working plate
3. A bimetal plate
4. A direct-image plate

3-20. What color lighting should be used when processing coated plates?

1. White
2. Blue
3. Yellow
4. Violet

3-21. Using a twenty-one-step plate sensitivity guide when exposing and developing a subtractive plate, what is the highest number that should be solid to indicate proper exposure?

1. 3
2. 6
3. 9
4. 12

3-22. What term best describes the image areas of a plate being wet by water and not ink?

1. Scumming
2. Emulsification
3. Tinting
4. Blinding

3-23. What problem should occur when the nonimage areas of a plate are wet by ink instead of water?

1. Scumming
2. Picking
3. Ghosting
4. Chalking

3-24. Offset plates should be gummed up on a press anytime the press will be down in excess of what minimum number of minutes?

1. 15
2. 30
3. 45
4. 60

Learning Objective: Identify the types of ink that are used, the care of ink, and the problems associated with ink on the press.

3-25. The color of ink in a can is best known by what term?

1. Masstone
2. Undertone
3. Tinctorial strength
4. Drawdown

- 3-26. The color of light reflected by paper and transmitted through a thin film of ink is best known by what term?
1. Masstone
 2. Undertone
 3. Tinctorial strength
 4. Drawdown
- 3-27. In what order should you lay down offset printing inks to achieve the best color?
1. Cyan, magenta, black, and yellow
 2. Magenta, cyan, yellow, and black
 3. Black, cyan, magenta, and yellow
 4. Yellow, magenta, cyan, and black
- 3-28. What substances used in the manufacturing of ink provides the color?
1. Resin
 2. Drier
 3. Vehicle
 4. Pigment
- 3-29. What ingredient of offset ink carries the coloring matter from the ink fountain to the paper, and also binds the ink to the substrate when dry?
1. Vehicle
 2. Resin
 3. Cobalt
 4. Reducer
- 3-30. What drying method takes place when printing with sheetfed offset inks?
1. Absorption
 2. Oxidation/Polymerization
 3. Evaporation
 4. Solidification
- 3-31. Ink transferring from one sheet to the back of another in the stack is best known by what term?
1. Chalking
 2. Livering
 3. Piling
 4. Setoff
- 3-32. Pigment from the ink rubbing off the sheet is best known by what term?
1. Chalking
 2. Livering
 3. Piling
 4. Stripping
- 3-33. Ink failing to transfer from the blanket to the paper is best known by what term?
1. Chalking
 2. Setoff
 3. Piling
 4. Stripping
- 3-34. A small, doughnut shaped spot in the image area of a halftone caused by specks of dirt is best known by what term?
1. Smudge
 2. Mottle
 3. Hickey
 4. Ghost
- 3-35. The ink rollers refusal to take ink is referred to by what term?
1. Stripping
 2. Offsetting
 3. Smudging
 4. Chalking

Learning Objective: Identify papermaking methods and the types, characteristics, and care of paper.

3-36. What additive should be used during or after refining to increase the opaque quality and even the surface of the paper?

1. Sizing
2. Loaders and fillers
3. Pigments and dyes
4. Resins

3-37. What should be added to paper pulp to produce a bright paper surface?

1. Talc
2. Starches
3. Bleaches
4. Resins

3-38. What substance is added during the papermaking process to control ink penetration, pick resistance, dimensional stability, surface smoothness, finish, and appearance?

1. Starch
2. Talc
3. Rosin
4. Clay

3-39. The side of paper that provides the best printing surface is identified by which of the following terms?

1. Felt side
2. Wire side
3. Grain side
4. Velvet side

3-40. Which of the following processes is the final step in controlling the characteristics of paper before it leaves the paper machine?

1. Coating
2. Calendering
3. Rewinding
4. Sheeting

- | |
|--|
| <ol style="list-style-type: none">A. Index bristolsB. ParchmentC. LedgerD. Cotton-content |
|--|

Figure 3A.—Paper types

IN ANSWERING QUESTIONS 3-41 THROUGH 3-45, SELECT FROM FIGURE 3A THE TYPE OF PAPER DESCRIBED AS THE QUESTION.

3-41. Durable paper used for accounting and records.

1. A
2. B
3. C
4. D

3-42. Tough and stiff paper used for file and mailing cards.

1. A
2. B
3. C
4. D

3-43. Paper with principal use as business stationary.

1. A
2. B
3. C
4. D

3-44. Paper manufactured from cellulose fibers with resistance to dirt and grease.

1. A
2. B
3. C
4. D

3-45. When ordering paper, what Roman numeral symbol should be used to represent 1,000 sheets?

1. C
2. D
3. L
4. M

3-46. What characteristic of paper do the terms antique, wove, laid, and vellum represent?

1. Grade
2. Finish
3. Weight
4. Coating

3-47. You are required to reproduce 1,000 copies of a one color, one sided job that does not need any binding or finishing. What total number of 8 1/2 x 11 sheets of ledger paper should be cut down allowing for spoilage?

1. 1080
2. 1090
3. 1100
4. 1110

Learning Objective: Identify the components of an offset press and recognize their functions.

3-48. A press that is equipped to print on both sides of the paper in a single run is best known by what term?

1. A web press
2. A perfecting press
3. A sheet fed press
4. A multicolor press

3-49. The printing unit of the offset press does NOT include which of the following major components?

1. Ink fountain and rollers
2. Blanket, plate, and impression cylinder
3. Skeleton cylinder
4. Water fountain and rollers

3-50. During operation of the offset press, the plate on its cylinder contacts (A) the blanket cylinder, (B) the inking rollers, and (C) the dampening rollers. These contacts should be made in what sequence?

1. C, B, A
2. A, B, C
3. B, C, A
4. C, A, B

3-51. On an offset press, which cylinder transfers the image onto the paper?

1. The plate cylinder
2. The impression cylinder
3. The blanket cylinder
4. The skeleton cylinder

3-52. The ink is passed to the plate from which of the following rollers?

1. Ductor
2. Idler
3. Form
4. Oscillator

3-53. What are the two main components of an ink fountain on an offset press?

1. Force feeder and the reservoir
2. Ductor roller and the fountain roller
3. Metal fountain roller and the vibrator roller
4. Steel blade and the metal fountain roller

3-54. The ink is passed directly from the fountain roller to which of the following rollers?

1. Ductor
2. Idler
3. Form
4. Oscillator

3-55. Which rollers move sideways as they rotate?

1. Ductor
2. Idler
3. Form
4. Oscillator

3-56. To make ink run heavier on one area of a plate than another, you should take which of the following actions?

1. Adjust the fountain keys
2. Regulate the ink feed ratchet
3. Turn the fountain roller by hand
4. Manipulate the ink feed ratchet lever

3-57. What dampening system roller makes direct contact with the plate?

1. Form
2. Ductor
3. Fountain
4. Distributor

3-58. On the pH scale, what number indicates a neutral value?

1. 1
2. 5
3. 7
4. 8

3-59. Which of the following pH values has the greatest alkalinity?

1. 6
2. 7
3. 8
4. 9

3-60. What is the most accurate method of determining the pH value of a solution?

1. By using a test strip
2. By using litmus paper
3. By using electrometrics
4. By using colorimetrics

Learning Objective: Recall the equipment used in binding and finishing printed work.

3-61. The production work accomplished while turning printed sheets into books is best classified by what term?

1. Finishing
2. Binding
3. Folding
4. Banding

3-62. The production of advertising displays, labels, and packaging is referred to by what term?

1. Finishing
2. Binding
3. Copy prep
4. Offset

3-63. A blank sheet of the exact paper stock used to reproduce a job that has been folded down, page numbered, and marked to show the lead edge is best known by what term?

1. Imposition
2. Folio
3. Folding dummy
4. Mechanical

3-64. Why should you plan a job so the paper grain runs parallel to the binding edge?

1. To maximize the endurance of the cover page
2. To make it easier to turn the pages
3. To permit better stitching
4. To make the bind of the finished product stiffer

3-65. What component helps prevent a paper cutter blade from becoming dull or breaking?

1. The knife guard
2. The knife gib
3. The knife draw limiter
4. The cutting stick

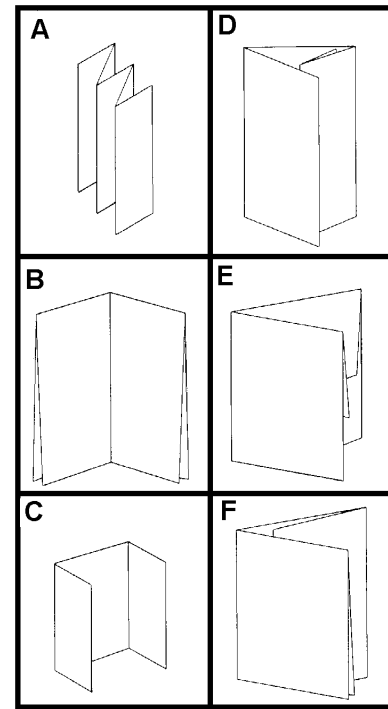


Figure 3B.—Common folds

IN ANSWERING QUESTIONS 3-66 THROUGH 3-68, SELECT FROM FIGURE 3B THE TYPE OF FOLD REPRESENTED IN THE QUESTION.

3-66. Eight page signature fold.

1. B
2. D
3. E
4. F

3-67. Gate fold.

1. A
2. C
3. D
4. E

3-68. French fold.

1. C
2. D
3. E
4. F

3-69. Which of the following is not a type of folder?

1. Knife
2. Buckle
3. Parallel
4. Combination

3-70. What component of a paper folder is adjusted to set the size of the fold?

1. Fold roller
2. Sheet plate
3. Plate stop
4. Deflector

3-71. What job order process should you use to produce a finished product using a mechanical binding method?

1. Collating, punching/drilling, assembling, trimming
2. Gathering, trimming, punching/drilling, assembling
3. Gathering, assembling, punching/drilling, trimming
4. Assembling, punching/drilling, trimming, collating

3-72. What type of binding uses glue to bind the pages of a publication at its backbone?

1. Velo-binding
2. Mechanical binding
3. Perfect binding
4. Smyth binding

3-73. What form of binding is the best method to use for joining publications that are up to 1/4 inch thick?

1. Adhesive binding
2. Side stitching
3. Saddle stitching
4. Casebinding