

Results of Diamond Screening Survey

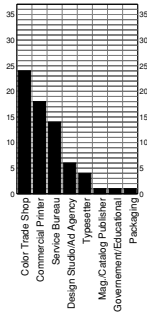
Submitted by: Harry L. Shaw
 Diamond Screening Subcommittee
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What Are You?

1. How would you characterize your company (check all that apply)?

21 of the 37 respondents consider themselves as doing more than one type of work.

50% of those who do color trade shop work also do service bureau work. 79% of those who do service bureau work also do color trade shop work. 50% of those who print also do color trade shop work; 22% of those who print also do service bureau work. 38% of those who do color trade shop work also print. 8% of the respondents say they do all three.



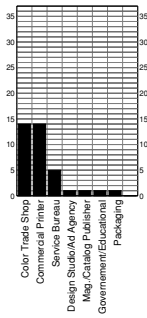
2. Which of the above would you consider your primary income source?

Approximately 40% of the service bureaus do color trade shop work in 1 above; approximately 40% of the color trade shops do service bureau work in 1 above.

36% of the printers do color trade shop work in 1 above; 29% of the printers do service bureau work in 1 above.

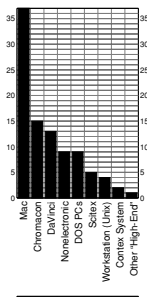
None of the service bureaus print in 1 above.

The 1 design studio/ad agency does nothing else in 1 above.



3. On what equipment do you prepare images and pages (check all that apply)?

73% of the respondents have "high-end" page assembly systems. 100% of the respondents use MACs. 24% have DOS PC's, also. 24% do some nonelectronic pre-press (possibly implying that 76% do all nonelectronic).

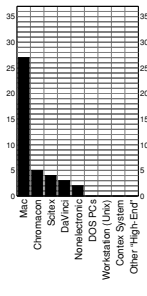


4. Which of the above is your dominant page assembly system?

44% of those who have high-end systems consider it (them) their dominant page assembly system(s).

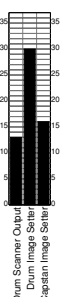
73% consider Macs the dominant page assembly system. No one considers DOS their dominant page layout system.

(things don't always add to 100% due to multiple responses to single-answer questions)



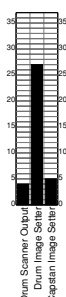
5. On what equipment do you image final film (check all that apply)?

Drum image setters are clearly dominant among the respondents.



6. On which output device(s) listed in #5 above are you most likely to image Diamond Screening (please, specify mfg./model)?

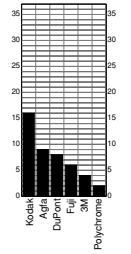
73% consider drum image setters the most likely for DS.



7. What kind(s) of film(s) do you currently use on the imaging device(s) listed in #6 above (list more than one if applicable)?

Qty	Manufacturer	Spec	Qty	Manufacturer	Spec
6	Kodak	S2000	1	DuPont	ScrFilm
6	Kodak	no spec	1	DuPont	CFR4
2	Kodak	ImgLt	1	DuPont	CSB4
1	Kodak	ESY LDF	1	Fuji	no spec
1	Kodak	SHN	2	Fuji	LS5500
3	Agfa	Scnr Film	2	Fuji	LS4500
2	Agfa	SPR712	1	Fuji	LS5000
2	Agfa	HN712	3	3M	no spec
4	Agfa	no spec	1	3M	EDG
1	DuPont	no spec	1	Polychrome	RLF4
2	DuPont	QDS#4	1	Polychrome	no spec
2	DuPont	CHC4			

Note: The writer is not familiar with all manufacturers and specs. Please, excuse any misrepresentations; I'm sure anyone who is interested can figure out what was intended.

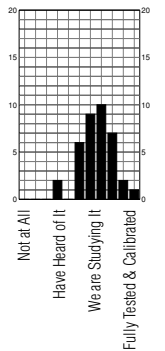


Stochastic Screening and You

8. How familiar are you with Stochastic Screening?

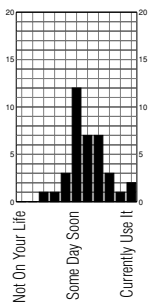
Most respondents are using or studying stochastic screening. The smooth distribution of the data implies that the respondents are all of the same population. The fact that the modal peak is well below "fully tested" implies that there is very little installed-base expertise.

Note that the respondent group may be inherently biased toward LHUG members who are interested in stochastic screening. If you were not interested, you might not bother to respond to the survey.



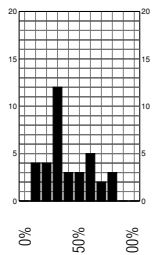
9. Do you want to use Stochastic Screening?

Again the data is relatively normally distributed, implying people of the same population. There is greater spread and the modal peak is at the middle of the scale; our population is less firmly committed to installation than to study.



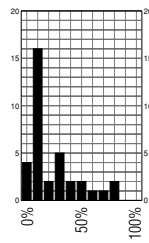
10. What percentage of your clients know about Stochastic Screening?

The data is not at all normally distributed, implying that the respondents are dealing with different client populations, or are not equally aware of their client bases. The modal peak at 30% may or may not be a good estimate of the awareness level of the total client base of the respondents, of LHUG, or of the graphics arts industry.



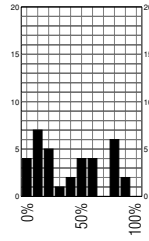
11. What percentage of those clients (#10 above) know about Diamond Screening by name?

The data is skewed big time, and implies strongly that the respondents perceive that brand awareness of Diamond Screening in their client-base(s) is low.



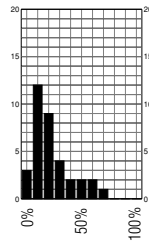
12. What percentage of those clients (#10 above) know about CristalRaster Screening by name?

The data is almost evenly distributed, implying different client populations. The evenness also implies significantly greater brand awareness of CristalRaster. The distribution of CristalRaster awareness is skewed farther toward 100% than is the distribution for stochastic awareness in general.



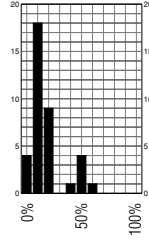
13. What percentage of those clients (#10 above) know what "HiFi Color" is?

The skew in the data implies relatively low awareness of HiFi color on the part of the respondents' clients.



14. What percentage of your total client base has specifically requested or discussed the use of Stochastic Screening?

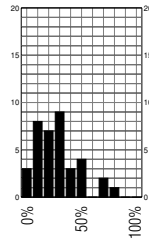
Although a mode of 10% is near the extreme left end of this histogram, it represents a large number of clients. This implies reasonable awareness by the client-base of the technology.



There appear to be two populations responding to this question. This observation caused me to study the responses of three sub groups of the respondents: Color Trade Shops, Service Bureaus, and Commercial Printers. Each group was bimodal at 10% & 50% (the three groups were not significantly different from each other nor from the total group). The variation in responses does not correlate with income source.

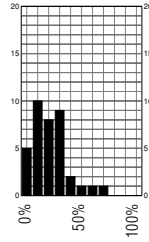
15. To what percentage of your total client base do you think you can sell Stochastic Screening within the next 9 months?

The data appears to be of one diverse population, with a mode of about 30%. This is a pretty big percentage! Also, note that the right tail of the distribution goes to 70%. Note that the question is "can sell," not "will sell."



16. On what percentage of your total jobs could you sell Stochastic Screening within the next 9 months?

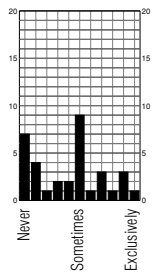
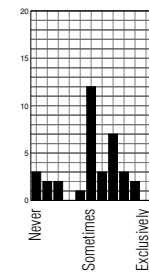
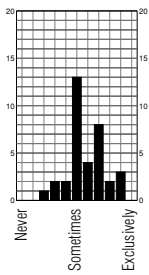
The data exhibits a slightly tighter distribution than Q15, implying less disagreement among respondents. The modal point of about 20% may seem low, but potentially 20% of the pre-press market going to stochastic screening by year-end is a pretty hefty prediction. Some respondents predict as much as 50-70% of their jobs could be sold as stochastic. Again, note that the question is "can sell," not "will sell."



Note on 15 & 16: Interestingly, when looked at by group, more printers think they will be selling DS to more clients on more jobs than do service bureaus and color trade shops. This may or may not imply that the printers which control the whole job will be able to apply DS more easily than a color trade shop or service bureau, each of which is an intermediary or subcontractor on many projects.

17. For what types of jobs would you most likely want to use Stochastic Screening?

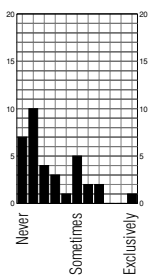
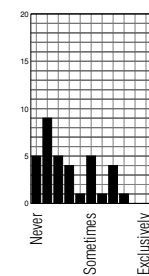
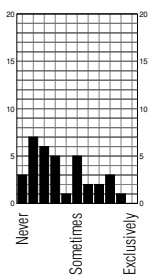
a. High Quality Process Color Work b. Commercial Quality Process Color Work c. Less-Demanding Process Color Work



d. High Quality Monochromatic or Spot Color Work

e. Commercial Quality Monochromatic or Spot Color Work

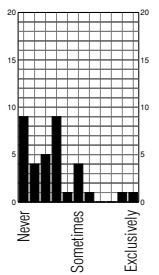
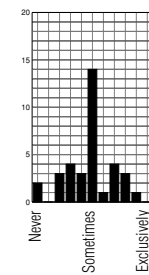
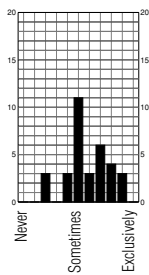
f. Less-Demanding Monochromatic or Spot Color Work



There appears to be a bias toward high end reproduction. The large variation in response implies that there is no clear answer to the question of how LHUG respondents want to use DS.

18. For what types of jobs would your clients most likely request Stoch. Screening?

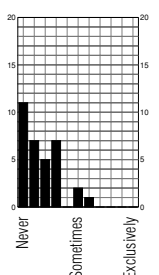
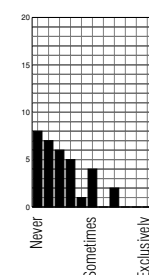
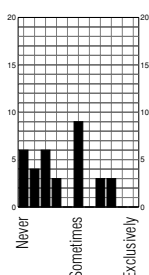
a. High Quality Process Color Work b. Commercial Quality Process Color Work c. Less-Demanding Process Color Work



d. High Quality Monochromatic or Spot Color Work

e. Commercial Quality Monochromatic or Spot Color Work

f. Less-Demanding Monochromatic or Spot Color Work



There is a perception that clients will request stochastic screening more frequently for higher end work, but not consistently, nor as often as LHUG respondents would like to use it.

19. For what subject matter do you think Stochastic Screening is well suited (check all that apply)?

I offer only the observation that with our first DS job, the flat tints looked real good, which defied my own answer to this question.



20. Do you (plan to) have Diamond Screening?

Most respondents have DS in their immediate plans. Only a few are using it in production.



21. Do you (plan to) have CristalRaster Screening?

Linotype-Hell users are less likely to buy CristalRaster. Several respondents have mixed shops.



Stochastic Screening and Your Competition

22. How many of your major competitors offer Stochastic Screening?

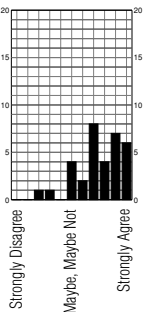
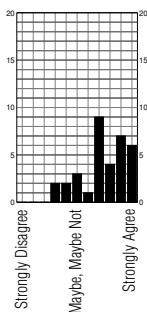
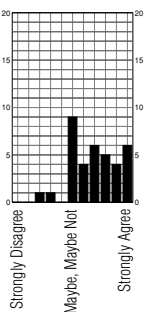
The responses to this and the next question were inconsistent and confusing. The questions may have been worded poorly, or the respondents are not completely aware of the offerings of their competition. It would appear that about 18% of the respondents' competition offer stochastic screening. Of minor interest, the average number of competitors was 7, with a range of 4 to 12.

23. Of those (#22 above), how many offer Diamond Screening (unless told otherwise, we will assume that the rest are using CristalRaster)?

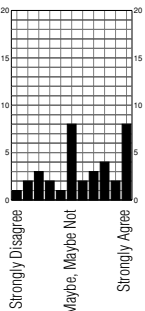
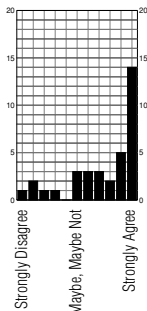
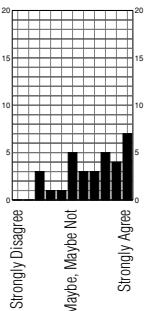
Again, the responses to this were hard to interpret, since the respondents had a difficult time with the question. With a grain of salt ... 20% of the competition to the respondents who offer stochastic screening offer DS. The implication is that 80% of those who offer stochastic offer CristalRaster. If this is true, we and L-H have some catch up to play.

24. How strongly do you react to the following statements about printed samples of Diamond Screening from Linotype Hell:

- a. "Samples would help me market the product a great deal."
- b. "Samples would help me explain the product more easily to others within my company."
- c. "Samples would help me explain the product more easily to clients."



- d. "Samples would provide a benchmark for our own tests."
- e. "We would like to get samples run from our own files."
- f. "Samples have no marketing value unless produced by us on our own gear."



Most respondents made it clear that they would like to have more samples, and for several of the reasons suggested. Running samples from their own files was a biggy. The last question was a controversial one, with no consensus.

25. What marketing and sales support would you like to see from Linotype-Hell?

(responses are simply listed below; please, excuse any misrepresentation due to misreading and one torn survey; [brackets] are editor comments)

Samples and tech support when we order the FM screening
How to print it; how to separate it; how to make a test form

More information about how to run on press
Very little

Samples - brochures

Send comparison samples to major corporation buyers of art/printing

Information, communication

Reports on [or?] samples of success stories

Large format (over 30X40)

Follow Agfa's approach, but 1-up them

Samples and more hype! Let's see ads

Samples and seminars

[Direct] mail marketing [this survey was ripped]

How to go about selling to our clients

Complete sample kit: film; proof; printed sample

Direct marketing comparison to our clients

Joint marketing calls; promo pieces

CristalRaster is much more a "high profile" name in our area; most haven't heard of Diamond Screening

Publicity like Agfa has arranged

Good, honest info and User Group Training on it at center

Technical advice and printer needs since I am not a printer [respondent was a service bureau]

Samples, test film, and proofs

Get the name out there; get samples in trade magazines; educate the media

Dot gain charts on diamond screening

More technical bulletins

On the Technical Side

26. Which approach will you most likely take to calibrate your system for Diamond Screening?

- a. **13** Calibrate the RIP/Image Setter so that a file imaged with Diamond Screening will print the same as the same file imaged with conventional screening ("print the same" might mean that if you set ink densities on the printing press the same for plates made from each set of film in the same way, you would get similar results on the same sheet of paper)
- b. **9** Calibrate the RIP/Image Setter so that a file imaged with Diamond Screening will proof the same on our film proofing system as the same file imaged with conventional screening ("proof the same" might mean that if you use the same exposure time with the same proofing materials, the two proofs would be visually similar)
- c. **5** Calibrate the Scanner so that a scan imaged with Diamond Screening will print the same as a scan made using our settings for conventional screening ("print the same" might mean that if you set ink densities on the printing press the same for plates made from each set of film in the same way, you would get visually similar results on the same sheet of paper)
- d. **5** Calibrate the Scanner so that a scan imaged with Diamond Screening will proof the same on our film proofing system as a scan made using our settings for conventional screening ("proof the same" might mean that if you use the same exposure time with the same proofing materials, the two proofs would be visually similar)
- e. **12** Alter Calibration at both the Scanner and the RIP/Image Setter to optimize results on the printing press
- f. **4** Alter Calibration at both the Scanner and the RIP/Image Setter to optimize results with our film proofing system

There is no consensus on the approach to calibration. The two dominant approaches are to alter the RIP so that DS and conventional print the same, and alter calibration at both the scanner and the RIP to optimize printing. (The DS subcommittee is currently running tests on calibration at the RIP. Look for a report summer 1994.)

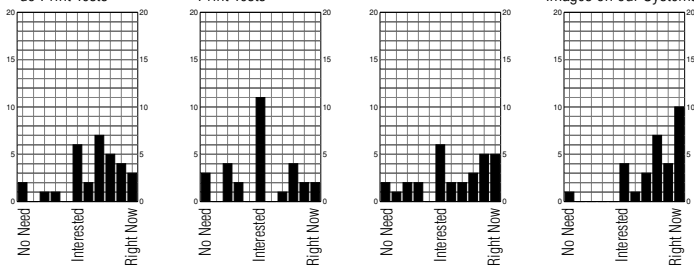
27. How do you plan to proof images and/or pages which will be produced with DS?

- a. **11** Use Digital Proofing
- b. **16** Use our Current Film Proofing System without Alteration
- c. **15** Alter Methods and/or Materials so that Current Film Proofing System will Accurately Reflect Diamond Screening on Press
- d. **1** After Calibrating the System for optimal results, run film with conventional screening for a film proof, and then run another set of film with Diamond Screening for plate making
- e. **4** Haven't a Clue.

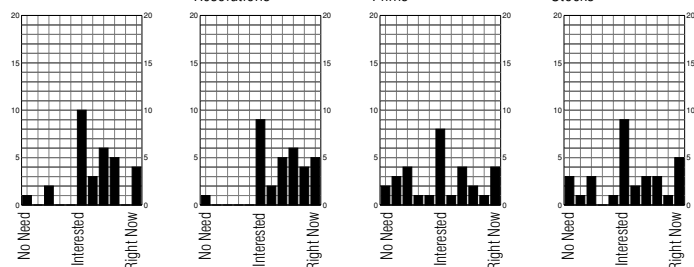
There is no consensus on proofing methods. The digital proofing systems mentioned were Iris (4), 3M DMP (3), Approval, Tek Color 480, and 3M Rainbow. Of those using film proofing; 55% use match print; however, distinguishing between the several varieties of match print was difficult. Other film proof systems mentioned were DuPont Water Proof (3) and Fuji Color Art (2).

28. Which of the following types of information would you like LHUG and/or Linotype-Hell to provide (please, read the entire list first, so that you can choose your priorities; your priorities will become our priorities)?

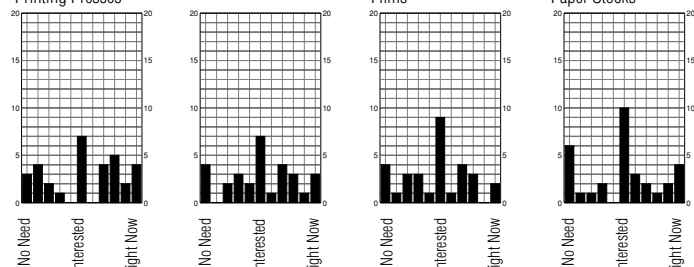
- a. Sample Gray Scales (5%, 10%, 15% ... like from LinoCal) of different Calibration Curves so that we can do Print Tests
- b. Sample Gray Scales (5%, 10%, 15% ... like from LinoCal) on different Film Types so that we can do Print Tests
- c. Film that Prints Properly so that we can Measure It and do Print Tests
- d. Files that Print Properly, with known and reproducible Conditions and Calibration, so that we can Look At and Measure the Images on our Systems



- e. Nominal RIP Calibration Curve
- f. RIP Calibration Curves for Different Resolutions
- g. RIP Calibration Curves for Different Films
- h. RIP Calibration Curves for Different Paper Stocks



- i. RIP Calibration Curves for Different Printing Presses
- j. Nominal Scan Characterization Curves
- k. Scan Characterization Curves for Different Films
- l. Scan Characterization Curves for Different Paper Stocks



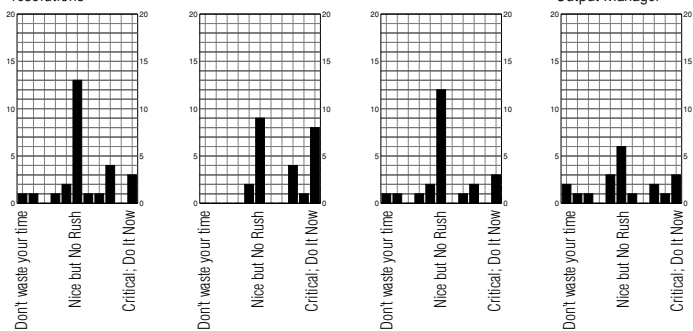
There is a great deal of variation in the responses to these question, implying that the respondents are not in agreement as to what they want. The most desired are a, d, e, & f: sample gray scales of different calibrations, files for in-house testing, and nominal RIP curves for various resolutions.

Sample film that prints properly is of interest, and is also available from the DS subcommittee, and several respondents requested it for testing.

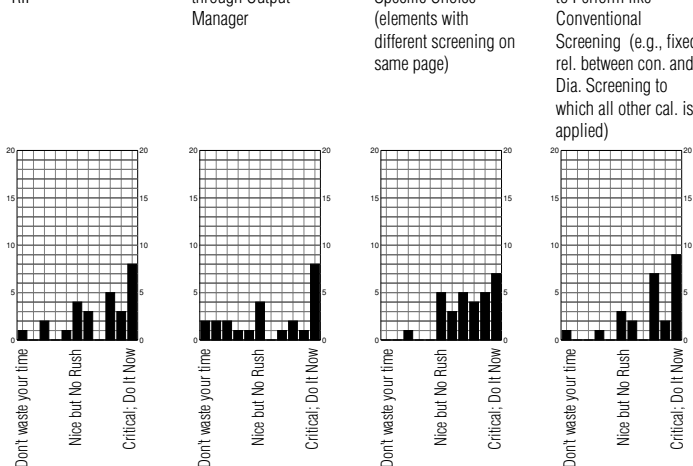
There is less interest in comparing film types, paper stocks, and printing presses, either as test samples, RIP curves, or scanner curves.

29. How important are the following potential enhancements (if they don't apply to your operation, leave them blank)?

- a. Diamond Screening at all available resolutions
- b. Diamond Screening at 2540 dpi
- c. Diamond Screening at 1693 dpi
- d. Diamond Screening Available through Output Manager



- e. Multiple Calibration Curves Available at RIP
- f. Multiple Calibration Curves Available through Output Manager
- g. Diamond Screening as an Element-Specific Choice (elements with different screening on same page)
- h. Diamond Screening Characterized in RIP to Perform like Conventional Screening (e.g., fixed rel. between con. and Dia. Screening to which all other cal. is applied)



Although interest in Diamond Screening at various resolutions varied, there is a stronger desire for DS at 2540 than for 1693 or all resolutions. Although there isn't much interest in DS through Output Manager, there is an interest in multiple calibration curves at the RIP. The most strongly desired characteristic is DS as an element-specific choice (possibly because Agfa has that, and possibly because certain aspects of a page might look better DS, while other parts look better conventional (photo of jewelry, 20% tint behind type). Finally, having DS characterized at the RIP to perform like conventional performs is strongly desired. Therefore, b, e, g, & h might be the highest priorities for product development.

Note: the variation in these responses indicates that the respondents do not have agree on what they would like most. This might be related to differences in priorities and work flows of the different types of respondents. There might be other reasons worthy of study by L-H.

30. If you have Diamond Screening calibrated so that you are getting good print results, please, run a gray scale and measure the negative dot % on the film with a transmission densitometer OR send the film with film type, resolution, type of RIP, type of Image Setter, blah blah blah, so we can measure it.

Only two respondents provided data, one of which was me. Both respondents are selling live DS jobs. Note: we calibrate only the RIP for DS; the other respondent is calibrating both the scanner and the RIP for DS. [bold is client response]

5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%
4%	7%	14%	19%	23%	30%	36%	45%	60%	76%	83%
2%	3%	7%	11%	16%	22%	29%	39%	50%	66%	80%

Scanner & RIP
RIP only

31. What are the most likely printing conditions to be used/tested initially with Stochastic Screening ("Don't Know" is an acceptable answer)?

Many different presses, plate materials, and inks were mentioned.