

TAGA - A 40 YEAR REVIEW

MICHAEL H. BRUNO

Consultant and TAGA Executive Director

Abstract: TAGA was organized as TALI in April, 1948, during a meeting of the Research Committee of LTF (now GATF). It became TAGA officially at the 1950 Annual Conference. The organizing meeting, the election of officers, the constitution and by-laws, and the first business meeting are described. Before describing the first technical conference in 1949, a report is given on the status of the printing industry in 1947-1949. This covered the dominance of letterpress, a brief history of LTF/GATF, the Institute of Paper Chemistry and other research institutes and technical associations, the rise of offset lithography due to platemaking research and developments at LTF, Tom Morgan's series of magazine inserts by lithography for Harris which included the famous Wine and Cheese print, the failure of the Time/Life Springdale laboratory to reduce makeready on Life letterpress printing presses to less than 10 hours, and the series of advertisements by Harris and Miehle showing the same subject printed on one side of a sheet by letterpress and the other side by offset lithography. The program for the first conference covered topics which are still the subjects of present day research. This program set the pattern for future conferences and TAGA's growth. TAGA's important role in providing a forum for and the reporting of the extraordinary progress in the printing industry during the following four decades are also described.

The **TECHNICAL ASSOCIATION OF THE GRAPHIC ARTS (TAGA)** started as **TALI** (Technical Association of the Lithographic Industry) in Chicago on April 15, 1948, during a meeting of the Research Committee of the Lithographic Technical Foundation (LTF) which is now GATF. The proposal to form such a group was made during one of the regular sessions and the actual organization was accomplished in a special evening session attended by 67 of those present at the meeting.

The concept of a technical association for the printing industry was discussed by Dr. Frederick H. Frost, Research Director of the S.D. Warren Company and me in the lounge of the Parker House Hotel in Boston in October 1947, while I was there to speak at

a meeting of the Boston Litho Club. Fred was an active supporter of TAPPI (the Technical Association of the Pulp and Paper Industries) and the LTF Research Committee. He felt that technologists in the printing industry and its suppliers and manufacturers needed an association with meetings, like TAPPI, at which they could report on research and development projects in progress and exchange ideas, knowledge and experiences in the handling and solving of problems. I agreed with him wholeheartedly and suggested that the next LTF Research Committee Meeting in April 1948, would provide a good forum for discussion of his concept. I was research manager of LTF at the time and Ernest E. Jones, president of Graphic Arts Corporation of Ohio, was Chairman of the Research Committee.

It was no surprise then when Fred Frost acted as chairman of the night session to discuss the formation, aims and functions of the new organization. It was generally agreed that the industry could benefit from an association of technologists that would provide annual meetings for the discussion of technical projects; prevent the possibility of needless duplication of research and development efforts; and promote a better understanding and cooperation between many members and groups who work independently. It was also agreed that the association should be autonomous without affiliation with any other organization and with membership based entirely on the qualifications of individuals.

When it came to electing provisional officers for the new association, I nominated Fred Frost for president. He immediately declined and nominated me. I was elected as were William H. Wood, Research Director of Harris Seybold, Vice President, and George Wilhelm, Litho chemist at Rand McNally Co., as Secretary-Treasurer. To speed the initial organization's work, the president was empowered to appoint a Board of Directors from the Midwest. Selected were Robert F. Reed, LTF, Anthony Ensink, Davidson Manufacturing Co., V. V. Vallandingham, a paper physicist, and Frank Preucil, Gerlach-Barklow Co. During the summer, the officers and board, assisted by Dr. Marvin C. Rogers, Research Director of R. R. Donnelley & Sons Co., worked on the constitution and by-laws for the association. This was modeled after the constitution and by-laws of TAPPI.

The first business meeting of the new association was held in Cincinnati on September 16, 1948. This was attended by over 60 lithographic technologists, including some who were not at the organizational meeting. Much of the discussion was devoted to the constitution and by-laws and centered around the restrictions for membership. It was agreed that a liberal interpretation be made of the phrase "formal technical training" so that no otherwise qualified technologist would be excluded because of the lack of a college

degree. The name **TECHNICAL ASSOCIATION OF THE LITHOGRAPHIC INDUSTRY (TALI)** was selected for the group and a permanent slate of officers and Board of Directors was elected. These were President, Michael H. Bruno, Research Manager LTF; First Vice President, Dr. Marvin C. Rogers, Research Director, R. R. Donnelley and Sons Co.; Second Vice President, Herbert R. Leedy, Harris-Seybold Co.; Secretary-Treasurer, George Wilhelm, Litho Chemist, Rand McNally & Co.; Board Members: Frank Preucil, Directory of Photography, Gerlach-Barklow, and Arthur W. Cornell, Research Director, Forbes Lithograph Mfg. Co.

The first annual Technical Conference was planned for Chicago at the Congress Hotel, April 12-13, 1949. Before discussing the program for this first conference let us look at the status of the printing industry in 1947-49 when TALI was conceived, born and engaging on its first exposure or baptism under fire.

In 1947 when the word **PRINTING** was spoken or written it meant **LETTERPRESS**. Witness the company names Western Printing and Lithographing Co. and U. S. Printing and Lithographic Co. **Lithography** and **gravure** were second rate processes which were used for specialties and lower quality printing. Lithography, especially, was known as the **gray** process. Single color printing was weak and unsaturated and 4-color printing was generally inferior in quality. According to "A 30-Year Chronology" by the Research and Engineering Council of the Graphic Arts (R&E) "The Graphic Arts industry was steeped in the lore of craftsmanship and old wives' tales rooted partially in facts. With its head buried in sand"...it fostered ..."accepted lore-prompted convictions such as:

'Display type will be set by hand - forever'

'Letterpress is the reliable King, because gravure is too expensive, offset unreliable' . . .

'In no way can four-color web printing be as appealing as single-color dry printing' . . . and

'Animal glues and flour pastes which demand hours of drying time and space between operations will never be replaced by hot melts and synthetic pastes.' "

Before World War II U.S. and Canadian printers looked to Europe, especially Germany and the annual Leipzig Fair for the latest in printing equipment and developments. The last important development to come out of Germany before the end of the war was presensitized plates by Dr. Fritz Uhlig of Kalle & Co. In addition to the many new responsibilities assumed by the U.S. after the war, we

had to bear the burden of advancing the state of the art of the printing and allied industries. Lithography and the paper industry were better prepared than letterpress, Gravure and the ink industries as they already had research institutes. Lithography had LTF and the paper industry had the **INSTITUTE OF PAPER CHEMISTRY**.

LTF was organized in 1924 as an independent research and educational institution by the Lithographers National Association (LNA) to do research in lithography and educate the letterpress printers who installed litho equipment to produce quality results so lithography would not get a bad reputation. Robert F. Reed was hired to head the research laboratory which was opened in March 1925 in the basement of the Chemistry building at the University of Cincinnati in Ohio. This laboratory produced many important advances in litho platemaking and the measurement and control of paper and ink variables. Towards the end of World War II the chemistry department at the University of Cincinnati anticipated expansion of its program after the war and asked LTF to move. LTF was reorganized in 1945 and the lab was moved to Glessner House in Chicago and affiliated with Armour Research Foundation (ARF), a division of Illinois Institute of Technology (IIT). Bob Reed was the only employee to move.

I was Research Officer at the U.S. Army Map Service. My immediate superior was Lt. Col. James G. Strobridge who was on leave from the Strobridge Lithograph Co. in Cincinnati and an active member of LNA and LTF. He urged me to consider applying for the position of Research Manager of the LTF lab after my discharge. I did so and was hired by ARF and Wade Griswold, Executive Director of LTF. I started work on December 1, 1945, with Bob Reed, Dr. Paul J. Hartsuch, an ARF employee, and a secretary. It wasn't long before we built a research staff, with George Jorgensen, Gordon Wheeler, Jim Martin, Ed Martin, Marie Morris, Joanne Heal, Bernie Kelly, Joe Jania and others; instituted an internship program with science graduates John Markward, Stan Kallenbach, Lou Pollner, Grant Beutner and others; and a VA training program with Gene Bulinsky, Mel London, Tom Mitchell, Bill Boehm and many others. In 1947 LTF severed connections with ARF and became autonomous again. The laboratory had developed cellulose gum as a substitute for gum arabic, plate surface treatments, Cronak for zinc and Brunak for aluminum - extensions of research I had initiated at the Army Map Service - studies of plate graining and sensitivity of bichrominated colloids and the LTF Sensitivity Guide and Star Target.

The Institute of Paper Chemistry was founded in 1929, in Appleton, Wisconsin. During the 1930's two important developments

advanced letterpress printing. These were machine coated papers and heat set inks. They were quickly adopted by magazines like Time, Life and Saturday Evening Post and were responsible for the improved quality achieved by these magazines. Europe, on the other hand, without these developments concentrated on gravure printing as it could print better quality on uncoated papers.

Immediately after the war, Time/Life established a printing research laboratory in Springdale, Connecticut. Its major objective was to reduce makeready on letterpress presses. It also took the Murray- Morse Scanner from Kodak and developed it into the PDI (Printing Developments Inc) scanner which was introduced in 1950, and it did considerable development in magazine papers and inks.

In 1947 a group of ink manufacturers set up the National Printing Ink Research Institute (NPIRI) at Lehigh University in Bethlehem, Pennsylvania under the directorship of Dr. A. C. Zettlemoyer assisted by Dr. William Walker, Dr. William Schaeffer and Jackie Fetsko who is about ready to retire. In 1949 the Research Committee of the Printing Industry of America (PIA) was organized into the Research and Engineering Council of the Graphic Arts, which became autonomous in 1954. The Gravure industry organized the Gravure Technical Association (GTA) in 1947, set up research programs at Batelle Memorial Institute in the early 1950's and later founded the autonomous Gravure Research Institute (GRI) under Harvey George.

There were no courses in printing at the bachelor's level. RIT was just emerging from being the Rochester Atheneum of Science and Mechanics situated in overcrowded facilities in downtown Rochester. Mark Ellingson was busy raising money to build new facilities. Locals of the Lithographers Union in litho centers were setting up schools for apprentices and craftsmen. The Chicago Lithographic Institute under Toby Morgan shared LTF's facilities in Glessner House.

In 1947, Tom Morgan's Lithokrome Corp. in Columbus, Georgia, (no relation to Toby Morgan who was also from Georgia) started printing a series of magazine inserts for Harris-Seybold using 4-color lithography. The purpose of the promotion was to demonstrate the quality capability of 4-color lithography. The famous **Wine and Cheese** print which is on permanent exhibit in the Smithsonian Institute in Washington, D.C. was produced in 1949 as a part of this promotion. It was the first time the printing industry realized what quality lithography was capable of - quality that actually exceeded the best of 4-color letterpress.

This was the scenario of the printing industries at the time of

the first Technical conference of TALI on April 12-13 in Chicago in 1949. It was attended by 136 registrants from coast to coast and Canada with a paper from England which was read by me. The program for this first conference is shown in Figure 1. It demonstrates the timeliness and ageless perseverance of lithographic research.

FIRST ANNUAL MEETING

The production of high molecular weight water soluble acids by the ion-exchange method. Miesse, Carlton B., Jr., Harris-Seybold

Residual films on lithographic plates and methods for their removal. Hartsuch, P.J., LTF

Coating thickness - and its importance in lithographic platemaking and performance. Leedy, Herbert R., Harris-Seybold

Wettability and the lithographic properties of metals. Martin, G.N., LTF

Evaluation of the surface bonding strength of paper. Van den Akker, J. A., and Wink, W. A., Institute of Paper Chemistry

A new principle in lithographic paper manufacture. Frost, Frederick H., S.D. Warren Co.

Ink flow on rotating rollers. Sjodahl, Lars H., Interchemical Corp.

The greasing tendency of lithographic inks. Gardner, F. R., NPIRI

The basis of color measurement. Hunter, Richard S., Hunterlab

A streamlined survey of color correction methods. Preucil, Frank, LTF

Color correction and the black printer. Yule, J.A.C., Kodak

The requirements of a color control instrument. Smith, Daniel, Interchemical Corp.

A motor driven carbon arc for the graphic arts industry. Hatch, A.J., Strong Electric

Lens flare in process cameras. Yule, J.A.C., Kodak

A method for testing resolving power of process lenses. Hunting, C.A., R. R. Donnelley

Tone reproduction on the press. Jorgensen, G.W., LTF

Gas black and boiled oil. Smethurst, P.D., England

Figure 1. Program for the First Annual Meeting of TALL.

The first paper was on the purification of gum arabic which is still a subject of considerable impact to manufacturers of lithographic chemicals.

The next paper was on plate surface treatments opening the way to presensitized plates which came a year later.

Coating thickness is always a problem. Control is the key.

Wettability is what lithography is all about.

The measurement of surface bonding strength of paper is still a will o'the wisp.

The new principal of paper manufacture involved double coating using a coating that was ink receptive and another that is water repellent.

This was the first report showing high speed pictures of ink splitting on the ink rollers of a press.

We're still struggling with greasing of litho inks.

We're just beginning to apply some of these principles of color measurement.

This was an outstanding introduction and explanation of photographic and electronic color correction.

This was another plea for the use of colorimetry and spectrophotometry for measuring color.

This was the first report on the new motor-driven arc lights

for camera and plate illumination.

This was an enlightening paper explaining some of the problems of camera photographs.

We're still chasing resolution and its relation to image sharpness and quality.

A report on George Jorgensen's long series of studies of tone reproduction and image quality in printing.

And a paper from England pointing out differences in pigment dispersion in ink vehicles.

This first conference was eminently successful. It set the style and pattern for the 38 conferences that have succeeded it and the 40th which follows. At the business meeting during the conference a proposal was made to change the name of the association to include all printing processes. The consensus of the members was that it was too early in the life of the organization to consider such a change. It happened the next year at the second annual technical conference in Rochester, New York. The name was changed to the **TECHNICAL ASSOCIATION OF THE GRAPHIC ARTS (TAGA)** and the constitution and by-laws were revised to adopt the change.

The change came just in time. There was a surge of sentiment in favor of lithography in the 1950's triggered partly by the improvements in printing quality and consistency produced by LTF's platemaking developments; partly by Morgan's Wine and Cheese print and others in the Harris Seybold magazine insert series; partly by Time/Life's failure to reduce makeready times on Life presses to less than 10 hours from 40 hours; and partly by comparisons of letterpress and lithographic quality printed by Harris and Miehle showing the same subject printed on one side of the sheet by letterpress and the other side by lithography with crossovers of the same subject printed half by letterpress and the other half by lithography. Lithography began its meteoric rise with the organization of the Web Offset Association in 1954 under the dynamic leadership of Herman Schultz. It slowly but surely chipped away at letterpress' hold on the magazine and catalog printing market. The PDI scanner became an important factor in color separation, and phototypesetting was making some headway.

The 1960's saw a gradual consolidation of the new electronic technologies. In the 1970's combined with the onset of the microcomputer, graphic arts prepress exploded with digital electronic enlargement and dot generation on scanners and complete

domination of photo and electronic typesetting with the introduction of the video display terminal and OCR. The 1980's have brought complete electronic layout and prepress systems that have made possible the realization of the dream of going directly from an original to a printing cylinder or plate without any intermediate film or conventional handwork.

All these developments are chronicled in the over 1000 papers published in the **Proceedings** of the past 39 TAGA Annual Technical Conferences. In addition to the papers, the Proceedings have reports of TAGA's three Technical Committees which sponsor workshops at each annual conference on; Color, Electronic Prepress and Ink and Paper.

One of the most important publications in our industry is the latest **Index** of the TAGA Proceedings published in 1986. It lists all the papers by subjects, authors and companies. A brief review of the most prolific authors in our industry is shown in Figure 2.

AUTHORS

J.A.C. Yule	Kodak/RIT	18(1949-71)
R.E. Maurer	Kodak	18(1959-82)
H.F. George	GRI	14(1952-83)
K. Simomaa	TRCF	12(1979-87)
T. Lehtonen	TRCF	11(1979-87)
J. MacPhee	Baldwin	11(1975-87)
A.C. Zettlemoyer	NPIRI	10(1954-69)
H.H. Hull	Donnelley/GATF	10(1951-71)

Figure 2. List of authors of numerous papers of TAGA Conferences.

Figure 3 shows a list of their companies which have generously shared the results of their research with the rest of the industry.

COMPANIES

Kodak	70(1949-87)
LTF/GATF	49(1949-87)
RIT	26(1960-85)
DuPont	26(1956-87)
MGD/Rockwell Int'l	23(1953-87)
Batelle Mem. Inst.	22(1950-68)
TRCF	18(1979-87)
Sun Chemical	17(1960-87)

Harris	16(1949-85)
Baldwin Technology	14(1970-87)
Crosfield	14(1956-87)
R.R. Donnelley	13(1949-81)
RCA	13(1952-71)
GRI	13(1958-83)
Xerox	13(1958-77)

Figure 3. List of Companies/Institutes sponsoring numerous papers at TAGA conferences.

In addition a review of the list of past presidents of TAGA shown in Figure 4 is like reading a Who's Who of the industry.

TAGA PRESIDENTS

PRESIDENTS	YEAR	MEETING PLACE
Michael H. Bruno	1949	Chicago, IL
Michael H. Bruno	1950	Rochester, NY
Marvin C. Rogers	1951	Columbus, OH
Paul W. Dorst	1952	Cleveland, OH
John McMaster	1953	Washington, DC
Richard F. Shaffer	1954	Milwaukee, WI
George L. Erikson	1955	Boston, MA
Paul J. Hartsuch	1956	Chicago, IL
Robert E. Rossell	1957	Philadelphia, PA
Virgil P. Barta	1958	Los Angeles, CA
Frank M. Preucil	1959	Rochester, NY
Philip E. Tobias	1960	Washington, DC
William C. Walker	1961	Columbus, OH
Warren L. Rhodes	1962	Minneapolis, MN
William T. Reid	1963	New York, NY
F.L. Wurzburg, Jr.	1964	Pittsburgh, PA
Cyril A. Horton	1965	Toronto, Ontario
Albert A. Materazzi	1966	Philadelphia, PA
Harvey F. George	1967	Chicago, IL
Bernard R. Halpern	1968	Atlanta, GA
Roy W. Prince	1969	Washington, DC
Wm. D. Schaeffer	1970	Boston, MA
Lester E. Goda, Jr.	1971	Rochester, NY
Alex Glassman	1972	Cleveland, OH
Erwin Jaffee	1973	New York, NY
Wm. A. Rocap, Jr.	1974	St. Paul, MN
Robert W. Bassemir	1975	Toronto, Ontario
Richard E. Maurer	1976	Philadelphia, PA
Webster C. Roberts	1977	Chicago, IL

Miles F. Southworth	1978	Pittsburgh, PA
Hugh J. Dunn	1979	Kansas City, MO
William Somerville	1980	Williamsburg, VA
Kurt Pfahl	1981	Rochester, NY
Brian M. Chapman	1982	Toronto, Ontario
Walter A. Bruehs	1983	Dallas, TX
John MacPhee	1984	Boston, MA
James R. Cox	1985	St. Paul, MN
Louis S. Tyma	1986	Valley Forge, PA
S. Thomas Dunn	1987	San Diego, CA
Ian M. Muir	1988	Chicago, IL

Figure 4. List of past presidents of TAGA.

TAGA also instituted its **HONORS AWARDS** in 1976 which annually honor several technologists who have distinguished themselves by their unselfish contributions to the advancement of the graphic arts. The past awards are shown in Figure 5.

TAGA HONORS Awards

1976	1982
Michael H. Bruno	Gordon O.F. Johnson
Paul J. Hartsuch	Herbert E. Philips
Frank M. Preucil	1983
John A. C. Yule	William F. Schreiber
1977	William E. Somerville
Albert R. Materazzi	1984
Robert E. Rossell	Robert W. Bassemir
Earl I. Sundeen	Kurt Pfahl
William C. Walker	1985
1978	Jean Chevalier
Bernard R. Halpern	Emilio Gerboni
F. L. Wurzburg, Jr.	Simo T. P. Karttunen
1979	Bryan H. W. Sunderland
Harvey F. George	1986
Richard E. Maurer	John MacPhee
John McMaster	J. Tom Morgan, Jr.
1980	Miles F. Southworth
William D. Schaeffer	1987
Philip E. Tobias	Werner F. Gerlach
1981	Warren L. Rhodes
John F. Crosfield	Kenneth G. West
George W. Jorgensen	

Figure 5. Recipients of TAGA Honors Awards

Unlike other technical associations like TAPPI, GTA and SPSE which have large paid administrative staffs, TAGA has always been a volunteer organization. In 1952 Kodak kindly loaned TAGA some part-time services of Earl Sundeen and his secretary, Emily Radtke. After retiring from Kodak, Emily worked half time for TAGA in an office generously provided by RIT and which we are still using. Executive secretary Earl and his wife, Clare, and Emily put in many long, strenous unpaid hours trying to keep TAGA on an even keel until Earl's untimely death in 1980. After over a year of trying to find another part-time executive secretary and TAGA sliding downhill with diminishing revenues and membership, I volunteered my services in 1982 as executive director. Emily retired several years later to take care of a terminally ill sister. TAGA was fortunate to hire Karen Lawrence as a full-time executive secretary.

With everyone's combined efforts TAGA is back on track with a healthy treasury again. We've expanded membership to corporate sponsors without endangering the autonomy of individual members and we've increased TAGA's member and fellowship services. Because I can't spend the time TAGA needs, it is again looking for a half-time managing director to handle routine administrative duties and meeting arrangements. I have been assured I can stay on as long as I want to serve in an advisory capacity and as a liaison between industry, TAGA, its officers, board and administrative staff.

TAGA may you celebrate many more memorable birthdays and continue to record the amazing saga of the magnificent printing industries, their manufacturers and suppliers.