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REGION 2 WINS STATE AWARD

**THE EXPANDING ROLE OF MICROGRAPHICS—
FEDERAL MICROGRAPHIC RULES**

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U.S. DEPARTMENT OF AGRICULTURE
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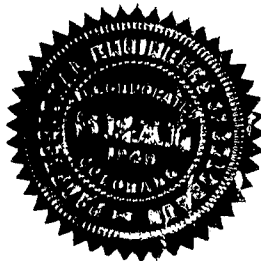
TO

U.S. Department of Agriculture
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1979

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REGION 2 WINS STATE AWARD

*Royal Ryser
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The Engineering Staff of Region 2 has been awarded the Government Professional Development Award for 1979 by the Professional Engineers of Colorado. Region 2 received the award in June in recognition of its accomplishments in acquiring professional registration, providing professional training, and encouraging attendance at professional meetings.

This award is made every 3 years to a Federal organization that displays outstanding achievement in the professional development aspects of engineering; local and state engineering organizations, respectively, are eligible for the award in the interim 2 years.

The award certificate is shown on the facing page.

THE EXPANDING ROLE OF MICROGRAPHICS

FEDERAL MICROGRAPHIC RULES*

*Col. Alexander Beim
Department of the Army*

ABSTRACT

New government rules for micrographics, published in March 1979, can have a potentially significant impact on both government and industry micrographic circles. They require government agencies to centralize approval authority for micrographic systems, inventory micrographic production and reproduction equipment (including COM), and establish micrographic management programs. Sound development and analysis of micrographic systems is required and standards are prescribed. New COM systems using 16-mm or 105-mm microfilm must use 24X or 48X reductions, while 24X reduction is prescribed for source documents. Requirements for archival microfilming and disposition authority for microfilmed records remain substantially unchanged from the rules for microfilming, last revised in 1972. The new rules are entitled "Micrographics" and are part of title 41 of the Code of Federal Regulations. They have been in the making for over 5 years and reflect the views of many government agencies, provided as early as 1975. The final regulation published in March of 1979 also reflects the additional comments received in response to the proposed version, published in the Federal Register a year earlier.

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*The views expressed in this article are those of the author, and not necessarily those of the Department of Defense or the Defense Communication Agency.

A new government regulation, titled "Micrographics," was published in the Federal Register in March 1979. This is the final version of the regulation which appeared as a proposed rule in the Federal Register exactly one year earlier. At that time it created considerable furor and much rhetoric in industry and government circles.

"Micrographics" replaces subpart 11.5 on "Microfilming" in Chapter 101 of title 41 of the Code of Federal Regulations. It reflects the expanding role of micrographics in the field of information technology and the need for sound systems development and for effective management of micrographics. Its provisions may have considerable impact on the largest single user of micrographics--the government--and thus, also on the micrographic industry. It requires analysis of micrographic systems, establishes government standards and institutionalizes micrographic program management.

BACKGROUND

Within the Federal Government, micrographic management programs came into existence in the early 1970s. Prior to that time very few organizations practiced what could be truly termed as a management approach to micrographics, although the Central Intelligence Agency and the Department of the Air Force were notable exceptions. By late 1970s, all military departments and quite a number of other government agencies had issued directives for formalized management programs.¹ Now the National Archives and Records Service (NARS) has made it official: all Federal agencies are responsible for "establishing, documenting and maintaining a program for micrographics management." This dictum has been a long time in the making. About 5 years ago, NARS began to work to update its "Microfilming" rules. In January 1975, NARS solicited comments from Federal agencies. Many of the recommendations made to NARS are now reflected in the new regulation.

Probably as significant as the new "Micrographics" regulation itself, is the supplementary information that was published with it in the Federal Register. It clarifies the purpose of the regulation and responds to some of the objections raised to the proposed rules issued in March 1978. It explains that the new regulation:

¹ Among current directives which govern micrographic programs are General Services Administration Order OAD P 1882.1, "GSA Micrographics Management Program," January 17, 1979; Department of Defense Directive 4120.22, "Department of Defense Micrographics Program," June 20, 1977; Federal Aviation Administration Order 1350.20, "Micrographics Management Program," February 3, 1976; Army Regulation 340-22, "The Army Micrographics Program," November 21, 1977; Secretary of the Navy Instruction 5210.12B, "Micrographics Program," April 23, 1977; and Air Force Regulation 12-40, "Microforms Management System," currently in draft and expected to be issued shortly.

- Responds to the needs of government agencies;
- Promotes micrographics and its effective management;
- Adopts available industry standards or those which are already in force in some agencies;
- Contains sufficient flexibility in both the management and the systems analysis requirements to satisfy the needs of different organizations;
- Retains already existing microfilming requirements and approval procedures when the destruction of original records is involved.

In fact, some parts of the new regulation remain essentially the same as the old "Microfilming" rules which were last revised in 1972. On the other hand, the overall thrust is considerably different and the new provisions are worthy of closer examination.

NOW IT'S MICROGRAPHICS!

The old rules dealt primarily with archival microfilming. The new version expands the scope into the realm of information technology.

- The larger role of micrographics is recognized. In addition to the concepts of microfilming for preservation and disposition, micrographic technology is related to active use, storage and retrieval and a variety of applications, including micropublishing.
- Micrographics is defined in a broad sense to include both document and information (i.e., Computer Output Microforms--COM) microfilming and it is associated with the systems concept.²

WHAT ABOUT COM?

The ambiguity of COM as both data processing and micrographic equipment remains unresolved. On the one hand, COM is included throughout the "Micrographics" regulation:

²The definition of micrographics as "the science, art, and technology of document and information miniaturization and associated systems" was first developed by the author in 1973. Though it is not the same definition used by NMA, it and similar versions have since been widely accepted in government use and it has now been incorporated in the "Micrographics" regulation.

- COM recorders must be inventoried along with other micrographic production equipment;
- Standards and guidelines established for creation of microforms also apply to COM;
- In the definitions listed, COM seems to fall under the aegis of micrographics.

However, procurement of COM recorders is subject to regulations which apply to data processing equipment. In addition, the only government-wide COM standard is part of the data processing Federal Information Processing Standards (FIPS).

CENTRALIZED PROGRAM MANAGEMENT

Centralized management of other information technologies is not new. For example, data processing activities in both the private and the public sectors have traditionally received management attention and centralized control. To a lesser degree, so has word processing. But when NARS proposed the much less stringent managerial controls for micrographics, the accusation was made that this "would create 'a hierarchy of micrographics czars' with NARS the czar of czars."³ Nonetheless, government agencies have now been directed to:

- Designate a central office or official to review and approve all micrographic systems. Delegation of authority is not prohibited, but management responsibility should be centralized.
- Issue regulations and procedures for evaluating and managing micrographic systems and applications. Copies of these regulations have to be provided to NARS.
- Develop and maintain an inventory of micrographic equipment. This may turn out to be quite a major undertaking, particularly for larger organizations. The inventory must identify equipment not only by category, manufacturer and model, but also by serial number, date of acquisition, location and purchase or rental status. On the other hand, the inventory is limited only to micrographic production and reproduction equipment. Excluded are display devices and storage/retrieval equipment, even if owned in large numbers and regardless of costs or degree of sophistication, such as may be found in automated or computerized retrieval equipment.

³"NARS Proposed as Czar Over U.S. Micrographics," *Micrographics Newsletter*, Vol. X (May 1978) p. 1.

- Disseminate information to managers and operating officials.

These program management requirements, if followed by government organizations, could provide a major impetus toward greater use of micrographics.

THE ROLE OF NARS

The responsibilities of the National Archives, as enumerated in their "Micrographics" regulation, are quite extensive. If they are carried out, they could well be of tremendous assistance not just to the government, but to the entire micrographic community. Budgeting and manpower considerations, however, may not permit NARS to accomplish all of the functions listed:

- Providing information on micrographics. This NARS is already doing through its records management handbooks on Microfilming of Records and Computer Output Microfilm and through its workshops and seminars.
- Disseminating standards, guidelines and criteria for conducting feasibility studies, cost estimating, comparing alternative approaches, selecting the right micrographic systems and evaluating existing micrographic systems. This is a very ambitious undertaking, though some of it is being accomplished by the publication of the new regulation itself.
- Determining new potential areas for micrographics.
- Inspecting micrographic programs of government agencies.
- Coordinating with other government agencies that also have responsibilities in the micrographics arena.

SYSTEMS ANALYSIS

System and cost/benefit analyses are required before a micrographic system is established. The guidance presented is fairly broad, but can be adequate if supplemented by agency directives. The scope of the analysis is not specified. It obviously should be tailored to the size of the proposed system, but the specific depth of analysis is left to the discretion of individual agencies. The "Micrographics" regulation does list what is referred to as "the basic elements to be considered in the systems analysis." These include:

- An examination of the current system;
- Consideration of alternatives to micrographics;

- Review of alternative methods of microform creation;
- Staffing considerations to provide sufficient trained personnel to operate the micrographic system;
- Review to insure compatibility of microforms with other systems.

STANDARDS

While individual government agencies have issued their own standards, up to now there have been very few government-wide micrographic standards. The new regulation establishes, for the first time, quite a few standards in a number of cases by adopting existing industry standards. The principal areas covered are:

- Outside dimensions of microfilm jackets;
- Archival microfilm. Both Federal and ANSI standards are cited for the kind of microfilm that meets archival stability requirements;
- Testing for residual thiosulfate using ANSI PH 4.8-1971 for the methylene blue test;
- Source document microfilm quality. The Quality Index Method described in NMA Recommended Practice MS 104-1972 must be used and a Quality Index of 5 is specified;
- Background density. Measurement is to be made according to NMA's MS 104, but the density ranges for various documents and for COM produced microforms are only recommended, not required;
- COM quality must meet NMA Standard MS 1-1971;
- For source documents, microfiche formats and reduction ratios (24:1 and 48:1) are to follow the Department of Defense Military Standard 399A. An industry standard, MS 14-1978, will be followed for 16-mm and 35-mm microfilm;
- COM formats and reduction ratios (again 24:1 and 48:1) are to be as specified in FIPS Publication 54.

YOU CAN'T PLEASE EVERYONE

NARS received quite a few comments when "Micrographics" was first proposed in March 1978. The final version shows that they were considered and contributed to producing a better directive.

Obviously, nothing is perfect and this regulation will not please everyone. Some members of the micrographic industry will remain unhappy with government involvement in establishing standards. Some members of the government community will remain concerned that NARS does not have a large enough staff devoted to micrographics to carry through on the potential inherent in the new regulation. And the question of whether COM belongs on the data processing or the micrographic side will continue to plague all.

SOME CONCLUSIONS

What does it all mean to the micrographic industry? The answer is hard to predict. It will depend on the degree to which government agencies comply with the new regulation. A number of agencies already have management programs which essentially comply with these rules. Based on their experience, some of these developments are probable:

- Micrographics will become more widely known and accepted;
- There will be an increase in micrographic systems among those agencies that establish program management. Concurrently there will be an increasing demand for micrographic equipment, supplies, and services;
- Some vendors will find it more difficult to sell to their government customers, as these conduct a more thorough analysis and follow new rules issued by their organizations;
- There will be an increasing demand for training and education in the field of micrographics. Seminars, NMA slide shows and vendor sponsored training will not be enough. Unless better, more professional education and training becomes available through the private sector, government agencies will continue to develop and rely on their own, in-house programs;
- More micrographic professionals will be needed. These requirements will be not only in the technician and operator area, but also in the management field.

The expanding use of micrographics will become less vendor driven and will be more predicated on top management recognition of micrographics as an information technology. It is doubtful that program management of micrographics in the government will achieve parity with program management of data processing in the near future. However, the stature of micrographics can be enhanced if it, like data processing, develops systems based on sound studies and economic justification and if the responsibilities for managing

micrographics are clearly identified and centralized in organization. So, the next step is to make this new regulation work in the Federal Government and to see that cost effective micrographic systems are implemented to the benefit of the American taxpayer, as well as the micrographic industry.

ABOUT THE AUTHOR

Lt. Col. Alexander Beim is one of the Government's leading authorities in micrographics. Currently he is deputy staff director for Military Personnel in the Defense Communications Agency. He is also a professorial lecturer at American University teaching a graduate course in computers and micrographics. He chairs the NMA Microform Formats Standards Committee, does consulting work and conducts seminars on micrographics and COM.

Formerly he directed micrographics management for the Department of the Army and headed its word processing and office management programs. He was also chairman of the Federal Government Micrographics Council.

Col. Beim has a Masters in Public Administration, is author of numerous articles on micrographics and has received many awards for his work in this field.

WASHINGTON OFFICE NEWS

OPERATIONS

Harold L. Strickland
Assistant Director

TECHNICAL DATA SYSTEMS WORKSHOP ACTION PLAN

Michael J. O'Brien
Editorial Assistant

The Certification & Technical Data Systems Workshop Action Plan (enclosure to R.M. Housley's 7110 letter of 9/24/79) includes provisions for regular submissions from the Regions of material for Engineering Field Notes, annual awards for the most beneficial articles published, and development of an Engineering Bibliographic Data Base. FSM 7113 is being revised to reflect these Action Plan requirements.

1. Under the program, each Region will forward at least one article for Engineering Field Notes each month; the first of these monthly submissions is required by December 15, 1979. However, all material should be forwarded for publication as promptly as it becomes available, rather than delaying its submittal to accommodate the monthly schedule.

2. Annually, three \$100 cash awards will be presented to Forest Service authors of articles that contain the most useful information. The material printed in the January 1980 issue will be the first items for consideration in the awards program, and the awards will be based on ratings by the readers who respond to a survey that will be conducted in January 1981.

The survey will cite the criteria of "most beneficial and useful," meaning that the information saved the Forest Service money or time, either directly (substitution of less costly materials or methods, development of new or alternative approaches that are faster, etc.), or indirectly (eliminated requirements for an information search, or trial-and-error approaches; or resulted in longer project life or increased multiple-use-benefits; etc.).

Since approximately 60 days elapse between receipt of material and printing in the Engineering Field Notes, authors should prepare material sufficiently in advance of December 1980, if they wish to have it included in the 1980 program.

3. Another important aspect of the Action Plan is the requirement that two clean copies (suitable for microform reproduction) of FS Engineering material that is produced at Forest or Regional levels shall be forwarded to the WO Engineering Technical Information Center for inclusion in the Engineering Bibliographic Data Base. In addition, Regions are asked to submit at least one copy of such material that has been produced locally since January 1978.

This procedure will permit use of data resulting from local operations at all levels, and will make it available to all FS activities through WESTFORNET, Regional Offices, and WO Engineering. Essentially, the data base will be limited to engineering reports, studies, and similar material that has not been distributed or available on a Service-wide basis.

For additional information on the new FSM 7113, the awards, and data base items, contact A.L. Colley, (703) 235-8077.

INVITATION TO READERS OF *FIELD NOTES*

Every reader is a potential author of an article for *Field Notes*. If you have a news item or short article you would like to share with Service engineers, we invite you to send it for publication in *Field Notes*.

Material submitted to the Washington Office for publication should be reviewed by the respective Regional Office to see that the information is current, timely, technically accurate, informative, and of interest to Forest Service Engineers (FSM 7113). The length of material submitted may vary from several short sentences to several typewritten pages; however, short articles or news items are preferred. All material submitted to the Washington Office should be typed double-spaced, and, ideally, all illustrations should be original drawings, glossy prints, or negatives.

Field Notes is distributed from the Washington Office directly to all Regional, Station, and Area Headquarters, Forests, and Forest Service retirees. If you are not currently on the mailing list, ask your Office Manager or the Regional Engineering Technical Data Systems Coordinator to increase the number of copies sent to your office. Copies of back issues are also available from the Washington Office.

Field personnel should submit material for publication or questions concerning *Field Notes* to their Regional Coordinators:

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Coordinators should direct questions concerning format, editing, publishing dates, and other problems to:

Forest Service - USDA
Engineering Staff (RP-E Bldg)
Attn: Gordon L. Rome, Editor
P.O. Box 2417
Washington, D.C. 20013

Telephone: (Area Code 703) 235-8198

