



# MANPRINT BULLETIN

Vol. VI No. 5

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## ODCSPER COORDINATOR NOTES:

- The Bulletin's size is flexible with a text upper limit of 9 pages. We have asked for reader input and provided some author guidelines. Beginning with this issue, what you contribute will determine what you get.
- The Bulletin prints articles from reputable sources. Authors are responsible for their articles. There is no editorial review board. We are interested in a free flow of ideas and rapid publication. Readers should examine each article critically. Some Bulletin articles may be controversial. Don't overlook an editorial note, if one accompanies an article. Rejoinders are welcome, assuming they are rational. The Bulletin is food for thought, not "the Gospel" except in MANPRINT NOTES or when the Director speaks.

Harry Chipman  
ODCSPER Coordinator

## NDI: A MANPRINT CHALLENGE

by MAJ Lauris Taylor Jones  
ODCSPER, MANPRINT Directorate

"Non-Developmental Item" (NDI) is a term which encompasses the acquisition of materiel from a wide variety of sources. All the services have significant examples of NDI programs. The Army modified the Chevrolet Blazer to perform as its Commercial Utility Cargo Vehicle (CUCV). The Air Force adopted a McDonnell Douglas passenger/freight aircraft to become the revered KC-10 tanker. An Israeli developed short-range remotely piloted vehicle was selected by the Navy. The Marine Corps has repeatedly acquired Army weapon systems as standard equipment. Simply stated, NDI acquisitions are characterized as previously developed hardware or software

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*"Remember the Soldier."*

that can meet the user's needs with little or no modification. The necessity for NDI use has been documented at the highest levels. The National Defense Authorization Act of 1987 requires the Department of Defense (DoD) to use NDI to fulfill needs to the greatest extent possible. This has led to the perfunctory statement of needs in generic terms of required performance, function and essential characteristics. DODD 5000.1 further requires use of an existing US/allied military or commercial system to be assessed and thoroughly reviewed as an approach to meeting a requirement. Full consideration is required, when possible, of using "off-the-shelf" commercial products.

NDI presents some notable benefits in the acquisition process. State-of-the-art technology can be rapidly acquired by the services. Research and development costs are reduced. Time to field can be abbreviated. The mobilization base is expanded to include available commercial production facilities. And finally, logistic support costs may be reduced via already available training plans, publications, drawings and special tools. Such advantages may well justify selection or modification of an off-the-shelf item.

Yet as the user may get a system sooner, the challenge remains in such an accelerated process to ensure that the end product is fully suitable to the target audience and mission. Requirements must be carefully cross-walked against the performance capability of the proposed item. Existing commercial test data must be validated and operational testing performed. Integrated logistics support activities normally accomplished in conventional preproduction phases may have to be radically accelerated, drawing heavily on manpower and funding resources.

Numerous total system performance concerns go hand-in-hand with the inherent test and logistics issues. MANPRINT constraints should not be traded-off too easily during the NDI process, nor should design influence be

reduced. Judgements should not be automatically based on market place data. Human system integration requirements must be accommodated by the hardware.

Manpower, personnel and training are critical decision points as to the suitability of an off-the-shelf system. An accelerated acquisition process may not allow adequate reaction time for the timely generation of a complete Basis of Issue Plan and Qualitative and Quantitative Personnel Requirements Information. The carefully prepared System Training Plan must focus on the soldier and training devices. Operational safety and health hazard risks must be identified and independently evaluated for acceptability. The absence of military standards in commercial design leads to a question of soldier-machine interface in varying environments. Finally, stabilization of human factors considerations can become difficult when the "as is" system is modified to meet turbulent requirements.

Given that the success of MANPRINT has been traditionally dependent upon its ability to influence early program design towards user-system compatibility, critical documents in the NDI process must be targeted. The MANPRINT practitioner cannot employ all the time-intensive studies inherent to a fifteen year acquisition process. In the NDI buy, the concept arrives in the form of a fixed design, therefore human systems applications must be evaluated in the absence of a complete integration effort.

To facilitate optimization of MANPRINT in a successful NDI life cycle, the System MANPRINT Management Plan (SMMP), Independent Evaluation Plans (IEP) and the Market Investigation (MI) should all remain constant requirements. However, these documents can and should be prudently tailored to the specific acquisition circumstances.

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*See page 3 for an outline of the SMMP format.*

# THE SMMP FORMAT

by Harry Chipman, MANPRINT Directorate

The System MANPRINT Management Plan (SMMP) format was revised by a procedural change message in Sept. 91. This format streamlines the previous one and eliminates the need for an abbreviated SMMP. The Target Audience Description (TAD) was significantly changed to prevent it from being a collection of "611-201 extracts" or something similar. This version will appear in DA PAM 70-XX.

The SMMP should facilitate the MANPRINT Joint Working Group (MJWG's) work and should not be a boilerplated, bureaucratic drill. The format helps accomplish those ends. The upcoming Practitioner's Forum will provide an opportunity to constructively discuss the current format.

The SMMP format contains seven elements and one appendix, in the order shown below. The element titles are shown below in **CAPS**. Following each title is a brief description of the contents required for the element.

**1. TITLE/APPROVAL PAGE.** System MANPRINT Management Plan for (name of the system) in support of Milestone #\_\_\_\_\_. This page is signed and dated by both the Commandant/Commander representing the proponent (combat developer) and the materiel developer.

**2. ABBREVIATED TOTAL SYSTEM DESCRIPTION.** Provide two sub-elements:

(a) System Description.

(i) Indicate system type (Combat, Combat Support, or Combat Service Support) and provide an abbreviated system description with emphasis on soldier-in-the loop.

(ii) Describe the operational environment in which the system will be operated, maintained, repaired, trained, and supported.

(b) Target Audience Description (TAD). Identify and list probable Military Occupational Speciality (MOS) and/or Office of Personnel Management (OPM) job series and grade for the personnel to operate, maintain, repair, train, and support the system. Give references providing more complete information on the listings.

**3. ACQUISITION STRATEGY.** Provide program category and indicate, when known, type of acquisition strategy (developmental, non-developmental, or materiel change) used.

**4. DEFICIENCIES AND/OR LESSONS LEARNED OF THE PREDECESSOR SYSTEM.**

(a) List deficiencies and/or lessons learned, by domain, of the predecessor system.

(b) Summarize how domain lessons learned are being applied to the new system.

**5. MANPRINT PARAMETERS.** List goals (desired outcomes) and constraints (boundaries which cannot be exceeded). DODI 5000.2, Part 4, Section C should be consulted.

**6. MANPRINT ISSUES.** This element will contain two sub-elements:

(a) Summary Listing (or page, if necessary). Shows the issues' titles with status indicators, and dates of initial or latest actions.

(b) Issues. For each issue provide the information requested under the following headings (indicated by quotes).

(i) Brief "Statement of Issue" and its impact.

(ii) "Affected Domains."

(iii) "Responsible Agency." Indicate the agency responsible for providing the data to resolve the issue.

(iv) "Data Source and Projected Availability." Document/specify test, analysis, or assessment from which data to resolve the issue will be obtained; indicate projected availability date of data source.

(v) "Findings." State the relevant data for, answers to, or resolution of the issue.

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(vi) "Status." Indicate open, closed, or monitor. State impact (risks and trade-offs) of an open or to be monitored issue on the program and fielding of the system. Such an unresolved issue may be included in the MANPRINT Assessment and/or Risk Assessment Annex to the Integrated Program Summary. If so, also provide an excerpt from the Acquisition Decision Memorandum which addresses the issue.

**7. MANPRINT EXECUTION.** Specific requirements for the element are shown in (a) and (b) below. MANPRINT execution typically involves: During Phase 0 (initial approved SMMP prepared for Milestone I) execution is to influence both requirement, contractual, and T&E documents. Subsequent phases will be concerned with the execution of plans to achieve MANPRINT goals, recommended solutions to potential problems associated with MANPRINT

constraints, resolution of MANPRINT problems identified throughout system development/acquisition, or resolution of relevant DODI 5000.2 requirements.

(a) Provide a time-phased description of how the MANPRINT program will be executed in each acquisition phase and of the crosswalks, e.g., Gantt chart with the Data Collection Plan superimposed on the Materiel Acquisition Schedule. Identify the lead agencies.

(b) For the current phase, identify the MANPRINT activities to be accomplished by each domain, include the accomplishing agency and POC, and the input/output requirements.

**8. ANNEX A - COORDINATION.** List organizations with whom the SMMP was coordinated. Include name, office symbol, and telephone number of the technical POC.

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## INTERESTED IN HOSTING A MANPRINT COURSE?

Would you like to host a MANPRINT Training Course? The Deputy Chief of Staff for Personnel Integration (DCSPI), US Total Army Personnel Command, is the proponent for MANPRINT Training and is currently developing the FY93 MANPRINT Training Schedule. We currently offer two types of courses and one seminar.

● **MANPRINT Action Officer Course:** 9 day course designed for action officers, CPT-LTC, SSG-SGM, GS07-GS12, and Industry personnel. Training focuses on the Action Officers role in MANPRINT and how the MANPRINT pieces fit together.

● **MANPRINT for Managers Course:** 2 day course designed for MANPRINT managers. MAJ-COL, GS12-GM15, and Industry personnel. Training focuses on how to manage MANPRINT and also how the MANPRINT pieces fit together.

● **MANPRINT for Senior Leaders Seminar:** 4 hour seminar designed for General Officers and Senior Executive Service personnel.

● **MANPRINT Training:** conducted by the US Army Logistics Management College at "NO" cost to the installation. Minimum class size is 20 students. The host must allocate 80% of the class seats with the remaining 20% open to contractors and other commands.

If you are interested in hosting a MANPRINT course or seminar, contact Mr. Dykhuis or MAJ Hoopengardner at COM (703) 325-2098/ 3706 or DSN 221-2098/3706.

NOTE: A special 2-4 hour MANPRINT presentation for **Senior Leaders Seminar** is currently available for new and incoming Senior Army Leaders. Contact Mr. Walsh, MANPRINT Course Director, COM (804) 734-2156/3250 or DSN 687-2156/3250 for further details.

## CE & CALS WASHINGTON '92 Conference & Exposition

by Gretchen Eberhard

The Concurrent Engineering and Computer-Aided Acquisition and Logistic Support (CALS) Conference, scheduled to run from June 2 through June 4, 1992 at the Omni Shoreham Hotel in Washington, DC, is jointly sponsored by The Society for Computer-Aided Engineering and The Concurrent Engineering Research Center, and held in coordination with the Office of the US Secretary of Defense. The Society for Computer-Aided Engineering (SCAE) is a technical association, affiliated with the

Fabricators & Manufacturers

Association, International, which is dedicated to developing the growth of computer-aided engineering technology for engineers and technical professionals involved in computer-aided applications. The Concurrent Engineering Research Center (CERC) at West Virginia

University, funded by the Defense Advanced

Research Projects Agency (DARPA) under the DARPA Initiative in Concurrent Engineering (DICE) program, seeks to promote and facilitate the adoption of concurrent engineering technology and techniques by US industrial users and suppliers. As the MANPRINT program seeks to achieve establishment of similar procedures and techniques, representatives of the DCSPER MANPRINT Program Office will participate in the exposition and conference. They will be present to further promote the philosophy and objectives of MANPRINT to both the DoD attendees and the industry officials who will be jointly responsible for the establishment of industry MANPRINT initiatives to maintain their competitive edge and

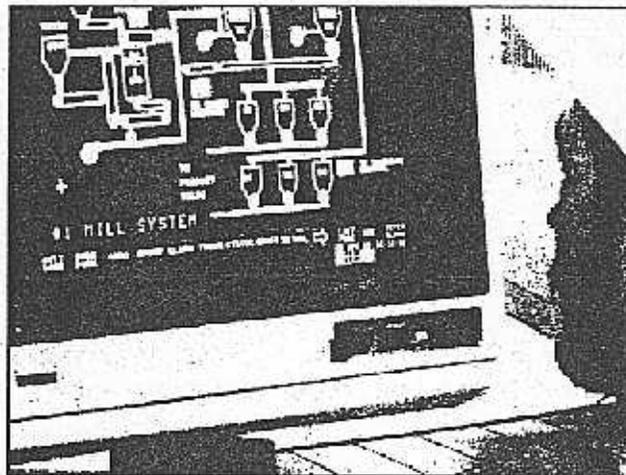
to design a system achieving total system integration and effectiveness.

The conference and exposition boasts a projected attendance of 1500+ with represented technical areas to include concurrent engineering, data protection and integrity, LSA/LSAR, EDI, SGML, PDES, and CAD/CAM. Many attendees and corporate exhibitors in attendance will represent occupational specialties including project management,

engineering design, system integration, logistics/product support, and other related disciplines. Corporate exhibitors scheduled to display include Computer Sciences Corporation; IBM; Loral Space and Range; G.E. Ocean and Radar Systems; Integraph, Corp.; and TRW, Inc. Government exhibitors include the Department of Defense; Wright Patterson AFB;

the Naval Surface Warfare Center; and, of course, the Deputy Chief of Staff for Personnel (DCSPER), MANPRINT Directorate.

Parties interested in attending should contact Linda or Carolyn at Majestic Travel for discounted airline fares at (800) 747-0553 or (815) 226-8900. Accommodations for lodging can be arranged through the Omni Shoreham Hotel at special exposition rates. Please call (202) 234-0700. As the MANPRINT Directorate will be displaying an exhibit at the exposition, complimentary tickets for admission can be obtained by contacting Gretchen Eberhard, Fu Associates, Ltd. at (703) 243-2992.



## MANPRINT PRACTITIONERS FORUM

On 16 - 17 June 1992, the Deputy Chief of Staff for Personnel (DCSPER), MANPRINT Directorate will sponsor the MANPRINT Practitioners Forum. The annual conference seeks to establish a forum at which personnel involved in the system acquisition process can meet and discuss relevant topics of concern. Additionally, the conference fosters the exchange of ideas and suggestions to both increase the quality of MANPRINT efforts and to further advance the establishment of MANPRINT. In the past, the conference has been limited to only military/government employees. This year the conference has been expanded to include industry representatives. This expansion should prove to be enormously beneficial as it affords both government and industry an opportunity to discuss and share ideas, opinions, or suggestions related to MANPRINT topics. Industry representatives are strongly encouraged to participate to further the relationship with government and encourage open communication for both present and future collaborations.

The 1992 conference is tentatively scheduled to kick-off with a welcome speech by Harold Booher, the Director for MANPRINT. LTG August Cianciolo, the Military Deputy to the Assistant Secretary of the Army (Research, Development, and Acquisition), will deliver the keynote address covering the Acquisition Process. Additional first day presenters and topics addressing the theme "Vision From the Top" include:

- ✓ DODD 5000.1, DODI 5000.2, and DOD 5000.2-M One Year Later - Mr. Rick Sylvester
- ✓ Army Research Laboratory - Mr. Tom Killion
- ✓ Total System Testing - Dr. Henry Dublin
- ✓ Domain Updates - Speakers to be announced

The afternoon session "How We Do It, Did It, or Would Do It", is scheduled to include the following presenters and topics:

- ✓ SMMP - Mr. Dennis Lipscomb
- ✓ PM SINGARS - MAJ John Zellmer
- ✓ PM Night Vision - Mr. Dave Shoop
- ✓ MANPRINTing Automated Information Systems - Ms. Diana Lueker
- ✓ Comanche Program and MANPRINT - Speaker to be announced
- ✓ HARDMAN III - Dr. Laurel Allender
- ✓ PM Trade and MANPRINT - Mr. Alan Galbavy
- ✓ Desert Shield/Desert Storm - MAJ Thomas Foley
- ✓ ILS/LSA Software and MANPRINT - Mr. Jim Dyser

The second day will focus on the topic "How It Feels in the Field." The session will be conducted as an open discussion format. All participants are encouraged to exchange ideas, suggestions, opinions, and helpful recommendations based on their experiences as MANPRINT Practitioners. Topics for discussion will include:

- ✓ MANPRINT and NDI
- ✓ Non-Major Program Acquisition Process
- ✓ MANPRINT Joint Working Group (MJWG) and Program Documentation
- ✓ Resourcing for MANPRINT
- ✓ MANPRINT and Human Systems Integration (HSI)
- ✓ MANPRINT and System Design

Persons interested in attending can make hotel reservations by calling the Ramada Hotel, Old Town, in Alexandria, Virginia at (703) 683-6000. Special room rates (\$83/single or \$93/double plus tax) are available until May 26, 1992. Reservations made after May 26 will be charged the regular room rate. Additional information can be obtained by contacting Ms. Gretchen Eberhard, Fu Associates, Ltd., 2300 Clarendon Blvd., Suite 1400, Arlington, VA 22201 at (703) 243-2992, FAX (703) 243-6229.

## NDI, *continued*

The SMMP provides a basis for issue development and documentation through early analysis of total system performance objectives. The identified objectives are then used in establishing the critical MANPRINT issues to be included in the IEP. These issues must address the Army's concerns and constraints as they pertain to the soldier performance and capabilities per system. Once these issues are included in the IEP, they can then be addressed as part of the formal Market Investigation.

The MI will ultimately focus on available technology as a direct response to the user's requirements, and answer the all important question - Is NDI a viable option in this case? Central to this evaluation process will be the linkages established between MI questions and MANPRINT issues/domains. Care must be taken to provide an evaluation of not only the strengths and weaknesses of a system, but also the potential trade-offs and resultant performance impacts.

Features of available hardware that support the needs of soldier performance should then be imbedded in the Test Evaluation Master Plan as system specific requirements, and, again, included in the SMMP. Infusion from the SMMP to other major program documentation, like the draft Integrated Logistic Support Plan and the Operational Requirements Document, must occur.

Ultimately, the Request for Proposal will then convey to industry the critical system MANPRINT characteristics which will be required and evaluated.

Just as the NDI acquisition strategy is tailored to meet individual circumstances, so should MANPRINT working groups and documentation flex to accommodate change. The MANPRINT practitioner is thus challenged to initiate an efficient process early out. Tools such as the newly formatted SMMP and HARDMAN III modules may be appropriate for application to accelerated early life cycle of NDI. Domain assessment agencies must be proactive, and eschew fixed policies regarding NDI. The Materiel Developer should carefully oversee the translation of user's needs into appropriate solicitation language, actively seeking human-systems integration criteria.

Most important is the understanding that NDI is but a variant of the system life cycle process. The user still initiates that process by establishing the need and materiel requirement. Therefore, the user must be equally responsible for early initiation of the MANPRINT effort. For the combat and training developer, as well as the program manager and contractor, keeping soldiers in the loop is very much the bottom line. There is time in the NDI process for MANPRINT.

## ENHANCEMENT OF FOOTPRINT RELATIONAL DATABASE

The Deputy Chief of Staff for Personnel Integration (DCSPI) has developed an Army Personnel Integration database called **FOOTPRINT**. This relational database provides key Manpower, Personnel, and Training (MPT) characteristics by MOS and CMF to support not only those involved in MANPRINT efforts such as the development of the Target Audience Description (TAD), but also to support planners, analysts, program managers, and design engineers. The FOOTPRINT relational database has rapidly evolved into a very powerful management tool with a variety of uses. Data is derived from existing databases and is available on the HQ TRADOC and HQ DA Decision Support System (DSS). Enhancements in FY92 will include adding Soldier family demographic data and Active Reserve and National Guard data. Future enhancements planned for FY93 will include the addition of task data from the Army Occupational Survey Program (AOSP) and Early Comparability Analysis (ECA), and the development of a PC based program. The Research and Development (R&D) effort to include officers and warrant officers in FOOTPRINT has been completed. Subject to availability of funds, an officer and warrant officer FOOTPRINT will be included in FY93.

- Harold Robinett, DCSPI, US Total Army Personnel Command

# MANPRINT IN THE UK

The following is a reprint from *MANPRINT briefing*, February 1992.

More than a hundred Industry and UK Ministry of Defense (MoD) personnel attended this 2 day Application Seminar on the 4th and 5th of February. The Seminar was sponsored by the MoD and presented by Toni Hodges of ARINC.

The Seminar was aimed at an audience already familiar with the MANPRINT philosophy, and was intended to cover the implications of its application for both industry and the MoD.

The topics covered in the 2 days included the MANPRINT process and its benefits; analyses, tools; and methodologies, organizational structuring for MANPRINT

implementation and MoD/ Industry collaboration. This report is by Ian Achurch.

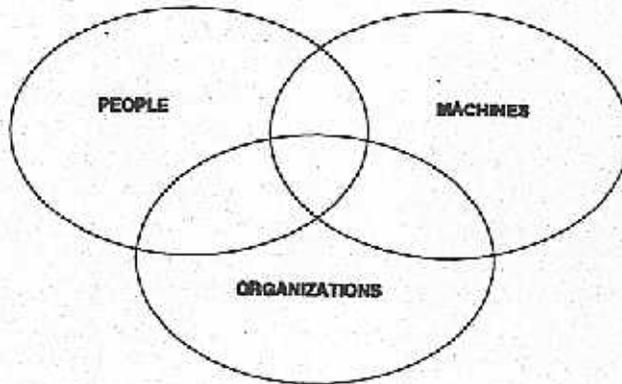
The Seminar introduction and subsequent exchanges left the audience in no doubt as to the MoD determination to fully adopt the MANPRINT requirement in its specification for future procurements. Current and future manpower constraints will reinforce the need for the MANPRINT requirement. It was announced that from the 24th February the MANPRINT office acquires a tri-service responsibility and becomes part of the Systems organization. From the outset there was a keen audience interest and participation in the proceedings. At times the ARINC presenter retired to the sidelines whilst Industry and MoD personnel vigorously debated some of the issues involved.

By the way of example I personally noted the following points amongst the many discussed.

"The ILS community made strong claims for MANPRINT, arguing that some of analyses were

ones which they already did, and that objectives such as through life costs were also common. However it was pointed out that whilst these areas of commonality were true, the primary concerns of MANPRINT were different. Where

as ILS was aimed at SUPPORTABILITY, MANPRINT is about PERFORMANCE and OPERABILITY, and should be viewed as a SYSTEMS responsibility.



One implication of MANPRINT is that in future procurements the total system including the USER is being developed and ultimately assessed for acceptance purposes.

The customer must

describe the user in meaningful terms to industry (The Target Audience Description [TAD]), since the user is effectively Government Furnished Equipment. This definition would appear to need to include a guaranteed minimum performance from a specified percentage of the user population. Acceptance testing would not only monitor total system performance against the specification, but would need to check that the personnel used in the testing matched the specification and performance underwritten by the customer in the TAD.

There was also Industry concern about other contracting aspects. Many of the MANPRINT analyses are concerned with getting the requirement correct prior to issuing for fixed-price competitive tendering. (This form of contract is also inconsistent with iterative trade off studies and throw-away prototyping activities.) This implies that MANPRINT funding and work starts at the concept phase. The

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## MANPRINT in the UK, *continued*

emphasis placed on communication and consultation in the MANPRINT process and the establishment of the real requirement suggests that other ways of tackling the concept phase should be considered. Better use might be made of scarce innovative and human factors engineering skills by the formation of joint MoD/ Industry working groups (similar to NIAGs in the NATO context) where the most appropriate people could be drawn from industry as a whole and the MoD, with the task of refining the requirement.

A further caution on the contracting side was made, that the MANPRINT activity in the PD and FSED phases would need to be separately

identified, costed, and tied to suitable deliverables. The risk otherwise being that it could suffer in the process of a programme manager trying to keep down costs."

The conclusions that could be drawn from this seminar confirmed the value of the BAe MANPRINT initiative, which was referred to frequently in the course of the proceedings. It is quite clear that the ability to respond to the MANPRINT requirement will be an essential and significant element of future compliant bids for MoD procurements, US sales, and a rapidly increasing market of countries adopting MANPRINT or its equivalent into their procurement.

## HUMOR...

### THE PROGRAMME

In the beginning was the Requirement, and then cameth the Tasking  
And the Requirement was without form, but the Programme was directeth,  
And a great darkness descended upon the coordinators thereof,  
And they spake hotly unto their branch head, saying:  
"The Programme is a crock of shit, and none can endure the odor thereof,"  
Now the Branch Head spake solemnly unto his Division Head, saying:  
"Tis a container of excrement, so strong that none may abide before it,"  
And the Division Head spake with concern unto his Deputy Chief, saying:  
"Tis a vessel of fertilizer, and none may withstand its strength,"  
And the Deputy Chief spake unto the Director, saying:  
"It containeth that which aids plant growth, and it is very powerful,"  
And the Director spake wisely unto the Assistant Commandant, saying:  
"It promoteth growth, and it is very powerful,"  
And the Chief reported joyfully unto the Commandant, saying:  
"This powerful new Programme will help promote our growth,"  
And the Commandant looked upon the Programme...and saw that it was  
good.

## MOVERS & SHAKERS

### PEOPLE IN THE NEWS

- MG Thomas P. Carney's promotion to LTG was confirmed by the Senate on 3 March.
- Rocky Nelson, formerly of HQ AMC, has joined the MANPRINT Directorate.
- MG Fred A. Gorden, formerly CG 25th Inf. Div. (light), has arrived at ODCSPER. He will assume ADCSPER duties upon MG Larry Budge's reassignment.
- Major David Hoopengardner, DCSP1, joined the MANPRINT Division Training Branch in March. Dave holds a Masters Degree in Management from the Naval Postgraduate School, Monterey, California. He will be responsible for MANPRINT training in conjunction with ALMC.