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POL-C-4-C

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June 10, 1969

## MEMORANDUM FOR THE RECORD

SUBJECT: MC&amp;G Annex to STG Document

On Wednesday, June 4, Colonel Allen and I were visited by Mr. Kingsley (DIAMC) who indicated that he had been asked by Mr. Palley for a geodesy paper for inclusion in the DOD STG document. Kingsley stated that he had suggested to Palley that the paper cover not only geodesy but mapping and charting as well. Palley agreed. Kingsley's problem, then, was to find a way to incorporate both the black and white aspects of the MC&G effort into a paper.

Colonel Allen and I suggested that Kingsley proceed to prepare the paper and bring it to us for review on Friday, June 6 at which time we could agree on a "white" submission for the normal DOD STG document and discuss the content of the "black" submission having made the other determination.

I met with Kingsley on Friday, June 6 and asked Lt Colonel Williamson to join us. We reviewed Kingsley's draft and made the necessary adjustments in text to render it "white". See Tab A.

On Monday, June 9 Kingsley returned with a redraft of the paper, which incorporated the changes, and suggested another way to handle our previously recommended change to paragraph b. (2) under Option 2 in order to protect the existence of the "data bank" while at the same time very indirectly implying that such a product reservoir did at least exist. I reviewed this suggested change (which appears on page 4 of Tab B) and agreed that it was acceptable. Tab B, then, is the paper Kingsley will furnish to Palley.

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Kingsley is now working a "black" paper which he hopes to have to us for review on Wednesday PM, June 11. We should, at the time of that review, decide whether

1. it should be incorporated into the NRP annex (which, incidentally, as of now, contains no reference to the MC&G portion of our collection effort)

or

2. it should be prepared as a separate "black" annex to the DOD MC&G document.

*Bill*

*I guess I'm not greatly enamored with incorporating specific op/c breakouts anywhere in our paper. As long as we speak to a capability, which in itself contains the MC&G capability, we have done enough.*

WILLIAM R. YOST  
Lt Colonel, USAF

*Y*

Copy to:

*R.*

- General Berg (information) ✓
- Col Allen
- Col Worthman (information)

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ISSUE: A program for systematic acquisition of accurate and timely mapping, charting, and geodesy information to satisfy military requirements.

DISCUSSIONS:

Objective: The program will fulfill the military requirements for space collectible data necessary to provide peacetime and wartime mapping, charting, and geodesy requirements. Present products vary extensively in design to support the total range of submarine, surface, air, and space weapon systems. Although some data is not suitable for air or space acquisition means; e.g. road classification, air facilities data, etc., the major elements of MC&G data are considered collectible by potential space acquisition systems.

Program Features:

Technical

- (1) Accuracy -
  - (a) Resolution suitable for large scale and local area maps.
  - (b) Positional consistent with weapon, navigation, and tracking system requirements.
- (2) Geometric relationships provide for locating physical and cultural features relative to required accuracies.
- (3) Include topographic, bathymetric, hydrographic, cultural, geodetic, geophysical and other related data.
- (4) Continuous (peacetime and wartime)
- (5)
- (6)

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Tab A

(7) Multi-spectral (to include development of systems for precise bathymetric surveying from space, with underwater object location and identification capabilities.)

(8) Multi-sensors, active and passive

(9) Multi-planetary coverage

(10) Automatic change detection capability

(11) Selective sensor control and monitorship

(12) Secure system.

Non-Technical

(1) Selected materials releasable to cooperative countries.

(2) Releasable end products - for general military use by U.S.

and allied forces.

Program Value:

a. The value of the program is nationwide, with primary emphasis to support the weapons and operations of the Department of Defense. Civil mapping agencies would benefit directly within their respective functional areas (USGS, USC&GS, Agriculture, Forestry, etc.). Civil users of topographic, hydrographic, geodetic, and related materials and data would also benefit, e.g. the scientific community interested in such technical areas as geology, geomorphology, oceanography, forestation, agriculture, etc., and the governmental - administrative community concerned with land usage, ownership, resources management, etc.

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- b. Would reduce/eliminate most DoD manned survey systems.
- c. Essential to fulfillment of DoD MC&G requirements, timeliness, accuracy, and scope of coverage projected for the 15-year period.

OPTIONS:

a. Option 1 - No DoD Funding: This option would continue the use of manned surface, submarine, and air systems and their appreciable dependence upon international cooperation for access to geographic areas exchange of data and participation in data acquisition and exploitation. Utilization of space systems would be ~~limited~~ essentially *that obtained by the joint DOD-NSA geodetic program.* Research and development programs would be designed to optimize data acquisition systems operating in sub-surface, surface, and air environments. Inherent technical and political restrictions would continue to render the data acquisition capability and capacity inadequate to satisfy DoD needs and thus degrade the effectiveness and potentiality of U.S. weapon systems, forces, strategy, and tactics. This option would deny the application of the state of the art to mapping, charting, and geodesy operations.

b. Option 2 - Intermediate Program:

(1) Under this option, the technical features of the acquisition systems would be modified as follows:

- (a) Intermittent rather than continuous.
- (b) Limited spectral range, including bathymetric and hydrographic capabilities.
- (c) Degraded accuracy capability.

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- (d) Limited sensor control.
- (e) No automatic change detection capability.
- (f) Loss of data currency and monitor capability.

(2) Responsiveness to MC&G support requirements would continue to be severely limited in hydrographic and nautical data and products.

Flexibility to react to unforeseen tactical situations would be improved, but not optimized. **A** the data bank concept would ~~continue to~~ *remain responsible results in a* lack of assurance that data required could be obtained when and where needed.

~~Accuracy limitations of space systems would require continuation of surface and air systems and their improvement.~~

c. Option 3 - Full Program: The program provides for the advancement of the state of the art to minimize restrictive surface, sub-surface, and air environment data acquisition systems and effectively apply space technology to the acquisition of MC&G data in consonance with military weapon systems development and operations, and national military objectives. This program, within technical limitations, would establish and maintain adequate MC&G support of the U.S. military posture and potentiality. U.S. independence in data acquisition would be approached, and international involvement in data reduction minimized consistent with related economics and other reasons for international involvement.

RECOMMENDATION: Option 3.

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Program Features:

Technical

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(b) Positional consistent with weapon, navigation, and tracking system requirements.

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(6)

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Tab B

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RECOMMENDATION: Option 3.

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