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25 June 1992

From: [redacted]

TO: COL [redacted]

SUBJECT: NRO Support to GWAPS

(b)(3)

1. I have reviewed [redacted] draft guidance memorandum to [redacted] detailing what he wants included in the GWAPS SECRET/NOFORN Space Volume and have, as well, reviewed my notes from our own GWAPS review session. My objective in this memorandum is to lay out the course of action as I see it by presenting where we have been, how we might proceed in the future based on recent guidance, and the potential pitfalls we face.

2. We have, since the inception of this effort, been tied directly to the "white world" space volume. For the third and hopefully last time, we will have to start over based on [redacted] guidance in the memorandum referenced above and attached at Enclosure 1 to this memorandum. I believe I can execute the new guidance and, in some instances, directly pull data from the old manuscripts, reformat it, and give it, chapter by chapter, to GWAPS for their use as they see fit. (See Enclosure 2 which compares [redacted] outline guidance to [redacted] with the inputs I believe the NRO should provide in annex format.) There are, however, two problems from my perspective: (1) I do not believe I can make the 1 August suspense; and (2) it is unlikely I can provide the "operational" flavor GWAPS wants simply because we, the NRO, do not have that kind of day-to-day operational interface with the user community.

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3. My plan, subject to your approval and guidance, is as follows:

a. Work directly with [redacted] and her replacement, [redacted] to support as necessary the development of the SECRET/NOFORN Space Volume. This should be the first priority; it is the GWAPS Office first priority.

b. At the same time, coordinate with [redacted] and his task force people what will be addressed in the TS/TK annexes to the Space Volume. Writing on these annexes will begin in conjunction with support to the development of the SECRET/NOFORN Space Volume. (Note that I expect [redacted] will also prepare a memorandum on our input after he comes back from vacation which may again slightly modify or refocus our support effort.)

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c. In our input, I shall only address those issues where the NRO clearly has a role to play. This means annex inputs GWAPS will receive will, by and large, be drawn from data that has already been provided in written form to GWAPS. I will add in additional data we have talked about and are collecting in preparation for the next space revision. However, I will not attempt to solve one of [redacted] biggest GWAPS shortcomings -- no one is telling or weaving in the complete intelligence story in the GWAPS volumes. The Space Volume and its annexes are not the place, and it is definitely not the NRO's job. I will stick to the NRO's story even if the input is no longer identified as the NRO's Space Volume, Part II.

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d. I will divorce myself from all efforts to tell the rest of the intelligence story other than ensure the space story is, where practical, referenced or detailed in other task force volumes. Just this date, [redacted] has received some kind of entry point into NSA. My comment to her was, "this data will by and large have to go in an SCI annex prepared by the GWAPS team."

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4. Recommendations:

a. That you approve my general course of action detailed in paragraph 3 with whatever additional fine turning or direction you want to give me.

b. That you verbally and in writing respond to [redacted] as to how we plan to proceed. (I will put together a draft letter for you to send to [redacted])

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c. That Mr. Faga be given an update on the GWAPS Project detailing what has been done to date and what the course of action is for the future. This memorandum should likely be followed by an office call to ensure Mr. Faga is fully conversant on the status of the NRO role in GWAPS.

d. That I be given authorization to subsequently complete the large GWAPS draft for internal NRO use and reference purposes. With the additions we have talked about and some reorganization for the benefit of the NRO, this could be a very exciting DS/DS compendium and one that would very nicely tie in space support to military operations since WWII.

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ENC 1

Draft Guidance Memorandum

To:

From:

Date: 19 June, 1992

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Subject: Guidance for "Space Operations in the Gulf War"

This volume presents peculiar problems, in part because it is incomplete -- the more highly classified space systems are not covered. That fact needs to be advertised in the Introduction, and at other portions in the text, to include the chapter on Intelligence.

The emphasis throughout the volume must be on how space affected the conduct of military operations -- technical detail should be placed in footnotes (which really should be at the foot of the page) or in appendices. Rather than just saying how many communications circuits were available, for instance, the author should give some indication of what kind of real capability that provided. The first draft of this volume had a primer feel to it: the current introductory chapter should be made an appendix, for that reason.

In this volume, as in all others, the guidance in my "Where we go from here" memorandum stands -- write only in the past tense, refrain from making recommendations to the Air Force, but feel free to tell the story in a pointed way. Major problems can be described quite easily in this manner.

The relationship between this volume and the SCI portion is a delicate one. The latter should be re-written as a set of annexes to the chapters in this volume, with some chapters, obviously, being longer than others. The key principle is that wherever possible discussion should be kept at the SECRET level or below.

This volume deals with the role played by space based systems of various kinds during both DESERT SHIELD and DESERT STORM. It is understood and accepted that this may entail some duplication of effort with other task forces: what is important is that some kind of coherent space story be told in this study.

Particular care must be taken not to shoehorn what happened in this war into a doctrinal framework for the use of space: our task is to tell a story, but in an analytic way that raises large issues or problems for other folks to solve.

This volume has a number of themes:

- planning for the use of space, including space awareness among the forces sent to the Gulf;
- the problem of space mobilization, including the length of time required to prepare for operations in space;

- the impact of space-based systems on the conduct of the war;
- the command and control of space-based assets, including the degree of centralization revealed in the war;
- the role of commercially available or utilizable space systems (LANDSAT is an example of the former; GPS of the latter).

Introduction

The model for this chapter can be found in the EFFECTS volume, although that chapter was too long. The chapter should set out the purpose of this volume, its scope and overall layout, and the major research problems that were confronted. Key themes should be highlighted, although not addressed at any great length. The existence of a more highly classified annex should be given prominence.

Chapter 1, Space Order of Battle

The purpose of this chapter is to provide an overall description of coalition space systems as they affected the Gulf War. All descriptions should be with reference to the Gulf War - DSCS, for example, should not be discussed in the abstract, but in terms of communications support to DESERT SHIELD and DESERT STORM, etc. Commercial and non-American systems should be covered.

This chapter should also lay out some of the fundamental command and control issues involving space, including the overall nature of space planning in CENTCOM, who controls what assets, and so forth. The purpose is to give an overview that will set the stage for the deep, functional analyses that follow. Any common threads among these systems (e.g., the relative age of some of these systems, their maturity) should be described. Crude numbers (e.g., numbers of satellites in the various constellations) should be given.

Chapter 2, Iraqi Space Exploitation

This chapter has two purposes: first, to describe what use the Iraqis could make of space, including access to SPOT and other kinds of imagery or weather data; second, to describe their understanding of our space systems, and measures they undertook to counteract them, including deception and other actions, if any. This chapter is of particular importance, particularly as awareness of space and capabilities to exploit it spreads. At some point in this chapter there should be a brief discussion of CNN and Iraqi access to news coverage carried via space.

We will want to discuss what the Iraqis may have learned directly from us during the Iran-Iraq war about the use of space; the points made about the psychological impact of our space superiority on them should be noted as well. Where our knowledge may be imprecise (e.g. on Iraqi abilities to circumvent restriction on their access to commercial data) that should be noted.

Chapter 3, Communications

This chapter should tell both the DESERT SHIELD and the DESERT STORM stories, and deal with both governmental and commercial systems. The key here is a description of what kinds of communications capabilities were provided by space; technical detail should be kept to the minimum necessary to tell the story. Particularly interesting aspects of this story include the limitations, for security or other reasons, on the kinds of traffic that can be carried over commercial circuits. Deployment issues should also be covered -- how long it took to set up the kind of infrastructure necessary for long-haul communications between the theater and CONUS. There should be an overall assessment of how much of total Gulf War traffic was carried through space-based systems.

This chapter should be coordinated with the volume being produced TF IV; you can't hope to eliminate overlap, but it should be minimized.

Chapter 4, Intelligence

This chapter must be very explicit about just how much is being left for a more highly classified annex. I take it that a lot of the discussion here will deal with matters such as SPOT and LANDSAT imagery being used in support of operations. A distinction should be drawn between strategic intelligence -- the kind of intelligence needed for the overall planning of the air campaign, and operational or tactical intelligence -- the intelligence needed on a more or less continuous basis for its execution. With regard to the latter (e.g. inputs to the Mission Support System) discuss with TF II to make sure there is a common understanding of what difference these systems actually make.

I assume that this is the best place for a discussion of some of the ground receive systems. How these were introduced into the theater, who had them, how familiar operators were with them -- all should be discussed. Here or in the SCI annex there might be some discussion of the extent to which operational planners were or were not willing to tie operations to the capabilities of overhead systems.

Chapter 5, SCUD Detection

This chapter should describe how space based systems contributed to the monitoring of SCUD launches and their location. The evolution of the warning system should be noted, and diagrammed -- a graphic should show the various links and then give the time that elapsed from an observed event to warning information being passed to air defense forces as well as aircraft looking for SCUDs. Again, coordinate with the COMMAND AND CONTROL and with the WEAPONS, TACTICS, AND TRAINING volumes.

Chapter 6, Navigation

This is the story of GPS in the war. It is very largely a story of mobilization, but should also attempt to sketch the effects of the introduction of GPS on to the battlefield. This means that particular effort must be made to pursue the Army and Marine stories, as well

as USAF and Navy. Here again, the degree of prewar awareness of GPS in air forces (particularly but not exclusively USAF) should be noted. The issue of selective availability should be discussed, and the controversy about whether or not it would be used.

Chapter 7, Meteorology

This is the story of DMSP. Much of this story is told in the SUPPORT volume, and so the material here should be carefully coordinated. Some overlap is acceptable, though. The key question is again, how satellite gathered meteorological information made a difference in the Gulf War. Here and elsewhere you should be open to the possibility that it did not make much of a difference at all.

Chapter 7, The First Space War?

In addition to an explicit examination of the themes of the volume, this chapter should examine the assertion that this was, in fact, the first space war. This involves some comparative analysis of the use of space in previous military operations, including JUST CAUSE, URGENT FURY, and perhaps EARNEST WILL as well. The point is not to say "yes it was," or "no it was not," but rather to give the reader a sense of how much our utilization of space has changed over time, including our dependence on it. Some kind of rough cut at what percentage of US space assets were devoted to supporting the Gulf War should be attempted here. The chapter should also attempt some overall cut at what impact our overwhelming supremacy in space meant to the conduct of the war. It may be difficult to do this in a measured fashion, but it needs to be done.

Appendix, A Space Primer

This chapter should provide the basics of orbital mechanics that a lay reader would find useful in understanding how satellites operate. The various kinds of orbits should be described, plus some information about the costs of satellites and how they are controlled from the ground.

DEADLINE: Draft ready for Review Committee by 1 August. Earlier partial drafts to be reviewed by me in preparation.

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ENCLOSURE 2

Space Volume Outline

NRO Annexes/Input

Chapter 1 - Introduction

Advice and support only to GWAPS.
They write.

Chapter 2 - Space Order of Battle

This is our original chapter 3 - NRO Support to DS/DS. It will need to be worked with the meeting comments in mind. However, not much change; **Annex A**.

Chapter 3 - Iraqi Space Exploitation

Advice and support to GWAPS. They have our initial draft and The National Impact Assessment and should be able to draw from those documents. This treatise should be completely presented at the SECRET/NOFORN level.

Chapter 4 - Communications

Annex B: Reformat data on TRAP [redacted] cannot be provided at the lower classification. Also factor in data from the Communications and Dissemination sections that were part of the original chapter 4 - Discussion and Analysis.

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Chapter 5 - Intelligence

Annex C: [redacted] has a bigger agenda than the NRO here. My plan is to insert the BASC, BDA, Targeting, Collection Management and Requirements, and

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Processing and Exploitation sections from the original chapter 4 - Discussion and Analysis. I will have to write an introduction to tie these topics together.

Chapter 6 - SCUD Detection

Annex D: I will write a new piece based on data I have on hand. I will also look for additional data.

Chapter 7 - Navigation

Annex E: I will use the MC&G section and augment it with new data on mapping I can come up with as it relates to [redacted] support to the mission.

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Chapter 8 - Meteorology

Annex F: This annex will include a short background on DMSP transition to the white world; it will also address [redacted] support to AWS during DS/DS.

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Chapter 9 - The First Space War

Annex G: This annex will be the chapter on the Evolution of NRO Support to Military Operations I was writing for the revision. It will also leave the reader thinking about the future of space support

Appendix - A Space Primer

I plan to use the introductory chapter in my second revision as an attachment of some kind to this appendix. It will discuss the role of the NRO and what the various systems do. This should be a direct lift from the original chapter 1, Introduction.

Other inputs: I still plan to do a chronology of SIGINT, IMINT, and MASINT events. Other back matter will include as well, a glossary, references, and an abstract. Footnotes will now follow each annex.

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