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28 November 1963
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UNITED STATES INTELLIGENCE BOARD
COMMITTEE ON DOCUMENTATION

Working Group on Remote Systems Input

The attached WGRSI report is transmitted for information; it reflects most recent developments, including selection of General Dynamics as the contractor to produce the desired secure paper-tape typewriter, plus the need for parallel development of a manual input-only device.

[Redacted Signature Box]

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Secretary

S-E-C-R-E-T

GROUP I
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CODIB-D-85/5
28 Nov 63

20 November 1963

MEMORANDUM FOR : Chairman, Committee on Documentation, USIB

SUBJECT : Report of Working Group on Remote Systems Input

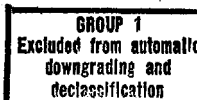
1. The Navy's request for price quotation to industry, based on the joint USIB/USCSB requirements for a secure paper tape typewriter, resulted in proposals from 9 companies. Two bidders--IBM and General Dynamics-- were judged promising from all points of view, and these companies were asked to present their proposals orally to the Working Group.

2. On the basis of the written proposals and oral presentations the Working Group and the Navy Project Officers are unanimous in their selection of General Dynamics as the contractor. The USCSB Technical Sub-Committee of the Special Committee on Compromising Emanations (SCOCE) considers General Dynamics capable of addressing itself to the security requirements. The basic differences of cost, ability to meet Nag 1A/TSEC specifications and related considerations leading to this decision are summarized in Tab A. The award will be granted as soon as possible.

3. We must report, however, that the best choice is by no means ideal. The General Dynamics device has not yet been built and tested; development costs are estimated at \$500,000; prototypes are to be delivered to the Government for testing 18 months from date of contract (mid-1965). Another 18 months from date of acceptance will be required before units are available in production quantities, i.e.: 1967. The device will probably cost around \$4000 when available; if orders for 1,000 or more units each year are anticipated.

4. The basic purpose of this program--development of a secure, economical, easily maintained device to be used in all jointly shared installations overseas for source data automation and input to telecommunications--will not be realized. While the General Dynamics machine, if successfully developed, promises great flexibility, security, and relatively easy maintenance, the prospects of spending \$4,000 per typewriter, plus maintenance considerations, will probably bar its use, in many of the smaller diplomatic posts.

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5. Because of this, the Working Group has requested the Navy to accelerate development of the "manual input--only" device specified as an alternate approach in the USIB statement of requirements and the Navy Technical Development Plan. It may be possible to devise a machine language recording device coupled with a normal manual typewriter which will satisfy the intelligence reporting and telecommunications needs of most small installations.


6. We see, then, a practical need to develop two devices. The more sophisticated will be used in a wide variety of applications which entail message formats, on-line as well as off-line communications, code conversion, message reading, and other rather comprehensive features. The manual device would be used by those services sharing small posts for intelligence reporting through telecommunications channels by Service Attaches, Foreign Service Officers, CIA personnel, as well as other classified usage.

7. The Working Group on Remote Systems Input will meet periodically to review progress on these developments and report its findings to CODIB.



Chairman, Working Group on
Remote Systems Input

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Coordinated in draft with
 Chairman,
Technical Sub-Committee of the SCOCE

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TAB A

**COMPARISON OF THE PROPOSED GENERAL DYNAMICS AND
IBM TAPE PRODUCING AND TAPE READING TYPEWRITER**

1. **IBM** - IBM offers a machine which is being developed for the commercial market at about \$3500. To meet NAG 1A/TSEC specifications, expensive modifications and additions are proposed, bringing the price up to as much as \$6000 each for 100 machines per year or about \$5300 each for 1000 or more machines. The mechanical design (no relays or contacts) of the basic equipment goes a long way toward making this machine secure; however, acoustical and power line modulation problems are yet to be solved. IBM's approach to acoustics - special covers to enclose the typewriter, reader and punch - accounts for much of the additional cost. Mean time between failure (MTBF) is estimated at 400 hours - far below requirements of the specification. While the machine will undoubtedly be easy to operate, it could present maintenance problems at small installations. Conversion from one code level to another can be accomplished in the field but with less ease than might be desired. In summary, IBM has a good machine far along in development but it is too expensive and lacks the flexibility offered in the General Dynamics equipment.

2. **GENERAL DYNAMICS** - The machine offered by General Dynamics is not an entirely new product. It will incorporate into one package ideas which, for the most part, have been tried and proven in other types of equipment. The cost for 100 units will be about \$6000 each, but is estimated by General Dynamics at \$3400 each for 1000 or more units yearly. NAG-1A/TSEC and military specifications can be met in all respects. The equipment will be easy to operate. Conversion from one code level to another can be accomplished by the operator. Flexibility appears almost unlimited with the options offered. Maintenance will be facilitated by modular construction and the possible use of throw-away components. MTBF is estimated at 4800 hours for electronic components and about 1550 hours for mechanical portions of the machine. Problems could appear in development, and delivery time for production is estimated at 18 months from acceptance of prototypes.*

Conclusion: Although not ideal, the General Dynamics machine appears to be the best all around tape producing/reading typewriter proposed to date at an acceptable unit cost.

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* In order to simplify and accelerate development and production, the Navy has agreed to waive the shock and vibration requirement in MIL E 16-400.