

UNCLASSIFIED  CONFIDENTIAL  SECRET

### ROUTING AND RECORD SHEET

**SUBJECT:** (Optional)  
Fixed Frequency Oscillator

<b>FROM:</b>  OC-SP/EA	<b>NO.</b> SPM 6-606
	<b>DATE</b> 11 October 1956

TO: (Officer designation, room number, and building)	DATE		OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
	REC'D	FWD'D		

1. Chief, OC-E	10-12		<i>[Handwritten Signature]</i>
2. R/D		10/17	<i>[Handwritten Signature]</i>
3. R+D/LAB		10-17	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

2-3. COMMENTS AND FURTHER INVESTIGATION, PLEASE. COPY RETAINED RFD.

DOC <u>15</u>	REV DATE <u>4-12-80</u>	BY <u>008632</u>
ORIG COMP	ORI	TIME
ORIG CLASS <u>S</u>	PAGES <u>4</u>	CLASS <u>C</u>
JUST <u>22</u>	NEXT REV <u>2010</u>	NOTE: HR 102

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STANDARD FORM NO. 64

**SECRET**

# Office Memorandum • UNITED STATES GOVERNMENT

**TO :** Chief, Communications Engineering Division

**DATE:** SPM 6-606  
11 October 1956

**FROM :** Chief, Supplemental Programs Division, OC

**SUBJECT:** Fixed Frequency Oscillator

**REF :** Memorandum to Chief, OC-E dated 20 March 1956, SPM 6-527

1. For some time the ELINT Activities Branch of this Division has been evaluating the oscillator model fabricated in response to the reference. As a result, it is requested that work continue on this project with consideration to the following:

1. The tuning fork case be opened and examined to determine if the transistor circuitry can be included in this case, thereby reducing the overall height of the oscillator.
2. The use of an odd size Pen-Lite battery makes re-supply a problem. It is requested that a standard miniature battery; such as the "Z" size Pen-Lite and its companion mercury cell be employed. (Mercury and paste batteries must be interchangeable.)
3. The toggle switch be replaced with a push button which has a lock on or hold feature.
4. Small IPC jacks be supplied as the audio output connector. No DC be present in the output; therefore, either transformer or R/C coupling in the order of 2000 ohms is desirable.
5. It is requested that two additional types of battery holder caps be supplied.
  - a) Type one which would be, in fact, a dummy battery with two solder terminals. This cap would be inserted and used where an external power source to run the oscillator is employed.
  - b) A battery cap which has two solder terminals so that the internal battery can be remotely switched on or off.

*what about moving  
at least tent  
use 2 pins to  
make polarity reversed  
use miniature tubes*

*TYPE NO*

*push button connector*

*60  
10/11/56  
1/1*

*use 2 pins  
2 pins  
1 ground*

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SPM 6-606

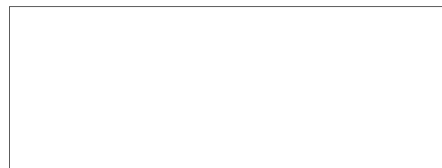
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2. The above comments relate to the tuning fork oscillator supplied per the reference. It is suggested that you investigate the use of a uni-junction transistor as a very small oscillator possessing 1% to 2% stability over the temperature range of 0 to 100° F. This unit should have a 1 kc output. This request is necessitated by the present size limitation on the tuning fork oscillator which prohibits its use in many types of collection activity. This demonstrates the need for a reference whose stability is known and is greater than the stability of the miniature recorder used for ELINT collection. For example, the minifon recorder speed will vary as much as 6%. Therefore, a 1% or 2% oscillator for reference purposes would represent a major improvement. It is obvious that when the environment allows, the tuning fork would be employed. This, however, is not always the case.

2517-2

3. With the inclusion of the comments in Para 1 above, it is requested that you undertake to fabricate ten fixed frequency oscillators of the tuning fork type, one of which will serve as a manufacturing prototype for an external contractor. The remaining nine are intended for field distribution. Your comments on the practicability of a uni-junction oscillator are requested.

2517-1



25X1

Attachment  
Tuning Fork Oscillator

Distribution  
Orig & 1 w/att - Addressee

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hrv - 23, 1956

Notes on Tuning fork Oscillator.

The SPD memo setting up the requirements for 10 Tuning forks requested the following details

1. Please try receptacles of the 10P - MB type be used. We've agreed to accept a telex jack in ~~the~~ the unit. The pin jacks would be encapsulated in a small block and connected by a cable to the telex plug.
2. They requested use of a Z type cell instead of the 922. The Z cell has an equivalent in the mercury RM-502R. The polarity of these batteries are reversed. It is OK with us if we use a full wave bridge rect. That no matter which way the battery is placed in the unit the circuitry will see the right polarity.
3. Interchangeable battery caps were requested to allow
  - ① external power to be used.
  - ② external switch be used (power)

agreed to our placing three B Submerature terminals under a removable plastic block such that external connections could be made to fulfill the above functions.

STAT

4.  Agreed that these requirements would also be desired on the uni junction oscillator

STAT

5.  Agreed to call and define the output power required of the fork oscillator.

STAT