

TOP SECRET

CX/MSS

Report #P 36  
7 May 1944

(# 3482-A)

SUBJECT: Fish Notes  
TO : CO, SEA, War Dept.

1. Enclosed is microfilm (D-127) of Fish traffic described in detail in the subsequent paragraphs. The delay in forwarding this has been due solely to the fact that everyone connected with the Fish problem has been under terrific pressure. The messages sent represent a selection from a mass of traffic which had to be gone through with great care to find those best suited, from the viewpoint of length and freedom from corruption, for the solution of the particular problems involved.

2. The first 7 messages on the film are Gurnard traffic. This is between Berlin and Belgrade or Zagreb. The messages selected are all from Berlin. This is a new link and has never been read. It surely embodies an auto-key element and probably has X<sub>2</sub> and P<sub>5</sub> limitations. The message numbers and page lengths are as follows:- #1751-27, #1101-36, #500-57, #1076-41, #1741-34, #1079-27, #1077-21. Since each page contains 500 (or slightly fewer) characters, some of these are of very great length and should be ideal for recovering X patterns. The texts of #s 1079 and 1077 seem best. The early part of #1101 is pretty bad and it would be advisable to work only with the portion following the bad stretch on page 32. #1751 is fairly good throughout and can probably be used in its entirety. It is long enough, however, to permit several portions to be selected for independent study. Since these are all April messages the X and P<sub>5</sub> patterns are presumably the same for all of them. There is, of course, a possibility that patterns changed some time during the month as has happened on other circuits.

3. Since Jellyfish has been broken a number of re-encodings from Bream have been found. Sometimes these are character for character; sometimes just the substance is re-transmitted. As a result a watch is being kept for possible re-transmissions on other links. The next item on the film is Gurnard message #1569 followed by Bream decode #1372. There is good reason to believe that this Gurnard message is identical with or similar to the decode. The same is true of the next pair of items, Gurnard #1114 and Bream decode #1334. No cryptanalytic study has been made to verify these conjectures and these pairs are sent for such use as you may be able to find for them. Presumably they will be of value only after the X patterns have been recovered. Message lengths are not necessarily significant because of the practice of sending several messages as one.

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4. Next in the film are a group of Codfish messages which are sent for X setting and final solution. This circuit uses Bream patterns but is not worked on at present because of lack of time. The link is Berlin - Salonika. The plain language characteristics were formerly about the same as Berlin Bream. The circuit uses X<sub>2</sub> and P<sub>5</sub> limitations. The message numbers, page lengths and encipherment dates are:- #4691-47-Apr. 16, #5060-65-Apr. 25, #5099-43-Apr. 26, #4998-1-Apr. 23, #4999-33-Apr. 23, #1853-21-Apr. 26. All but the last are from Salonika. The text of #5060 seems good only for the first 40 odd pages. In #5099 pages 16-41 seem to be the best stretch. If you wish to try 3 wheel runs or other procedures adaptable to shorter messages selections of good text of whatever length desired can be made from these messages. #s 4998 and 4999 have the same QEP numbers and are on the same date and can be used to practice derivation of Psi patterns.

5. The April Bream X and Psi patterns and the motor patterns for the dates covered by the above messages are as follows:-

X<sub>1</sub> ..XXXX..XX....X.XX..X..XX.X.XX.X.XXXX.  
X<sub>2</sub> XX..XX.XX..X.X.XX...X....XXX.  
X<sub>3</sub> ..XXX.XX..X....XX..XX.XX..XX  
X<sub>4</sub> ..XX..X.XX..X..XX..X..XXXX  
X<sub>5</sub> ..X...X.XX..X...XXX.XXX.

Psi 1 ..X.X.X.X.X.X..X..X.XX.XX.X.X..XX.XXX..XXX...  
Psi 2 ..X.XX.X.X.X.X.X.XX..XX.X..X.XXXX...XXX..X.XX  
Psi 3 X.X.X.X.X.X.X..X..XX.X.X.XXXX...XXX..XXX.XX..X..X  
Psi 4 X.X..XX.X.X.X.X.X.XX.X..XX..XX..XXXX.X.X..X...X  
Psi 5 ..X.X.X.X.XX..X.X..XX.XXXX.XX.X...X...X..XX.XX..XX..X.X.X

W<sub>61</sub>-16- XXX.X.XX..XX..XX...XXXX.X.XX.XX...XX...XXXX.XX..XX...XX...X  
-23- X...XX..XXX...X.XXXX..XX...XXX.XX...XXX..XXX.XXX..XX..XX  
-25- .XXXX.XXXX.XXXX.XXXX...XXXX...XX.XXXX.X.XXXX...XXXX...XX.XXXX  
-26- XXXXX.XXXX..XXXX.XXXX..XX.XXXX..XXXX..XXXX.XXXX.XX.XXXX.

W<sub>37</sub>-16- X.XXX.X.X.X.X..X.X.XXX.X.X.X.X.X.X.X.  
-23- X.X.X.X.X.X.X.XX.X.X...X.X.XXXX.X.X.X  
-25- ...XXXX.X...X.X.X.X.X.XX.X.X.X.XXXX.X  
-26- .XX.XX..X.X.XX.X.X.XX..XX.XX..XX.XX..

6. Jellyfish was broken for April and the following priority list was established:-

- 1. Current Rome Bream
- 2. Current Jellyfish
- 3. Current Berlin Bream
- 4. Jellyfish back to 1 April

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7. The Jellyfish wheels changed on 22 April and the new wheels, which are designated May, have been broken. Bream changed on 1 May and the wheels are also out. In both cases the Psi patterns were recovered without depths. The current priority list is as follows:-

1. Current Berlin Jellyfish
2. Current Rome Bream
3. Current Paris Jellyfish
4. Current Berlin Bream
5. Old traffic

This list is based on both intelligence and cryptographic considerations. The Berlin end of Jellyfish is a little easier than the Paris end, whereas on Bream, as previously advised, Berlin is harder than Rome.

8. Mr. Newman's section has been applying some of the methods described in Report #FR2 but usually only after Psi setting has been unsuccessfully tried by Maj. Tester's group. They are able to get out about 80% of the messages returned by Maj. Tester's section. The motor run takes about 10 minutes. All of the Psi runs together take about 45 minutes. These methods are used only after the day's motor patterns are known.

9. The Research Section has concluded that an auto-key element has been incorporated in the permutation machine of the Fish type.

Encl. - 1 microfilm

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Capt. Signal Corps

