

THE FOLLOWING INFORMATION HAS BEEN OBTAINED FROM P/W. AS THE STATEMENTS MADE HAVE NOT AS YET BEEN VERIFIED, NO MENTION OF THEM SHOULD BE MADE IN INTELLIGENCE SUMMARIES OF COMMAND OR LOWER FORMATIONS, NOR SHOULD THEY BE ACCEPTED AS FACT UNTIL COMMENTED ON IN AIR MINISTRY INTELLIGENCE SUMMARIES OR SPECIAL COMMUNICATIONS.

SOME FURTHER NOTES ON G.A.F. PATHFINDER PROCEDURE.

1. Since the issue of A.D.I.(K) Report N°160/151,4, "A G.A.F. Pathfinder Unit", the two P/W concerned have added some further details of the Egon procedure. This information, together with some notes on other navigational aids, is summarised in the present report.

EGON PROCEDURE

Operation

2. It was stated to be usual for five or six aircraft from 5/K.G.66, using the Egon procedure, to take part in a pathfinder operation. Whilst some of these would be engaged in laying the turning point markers, others, all controlled on one and the same frequency, would be flying at intervals to the target to place and renew the target marking.

3. According to P/W, although one Freya would suffice for the Egon procedure, two plotting Freyas are employed so that the second can give undivided attention to the aircraft which is near and over the target, whilst the first Freya plots the aircraft up to that point.

4. When a pathfinder aircraft has released its first flares it is usual for it to make a 180° left-hand turn and fly away from the target, leaving its bomb-doors open and maintaining the same height as at the time of flare release; a further turn of 180° then brings the aircraft back to its original course for the second run-in.

5. Freya control is maintained during this manoeuvre and course corrections are given if necessary; should the aircraft be in the correct position for the bombing run, the only signals from control are those for pre-release (dash) and for release (dot). It is stated that the latter signal may consist of either one or three dots.

6. It frequently occurs that aircraft which have placed the turning-point markers also proceed to the target area to help in renewing the marker flares. In such cases the aircraft are given new courses by control immediately after completion of the turning-point marking; the initial new course is indicated in this case in degrees, e.g.: "Autobahn 128".

7. Freya control of any aircraft ceases immediately after the completion of the task of that particular aircraft.

Range and Accuracy

8. The present Egon procedure is operable up to a range of approximately 270 km. P/W amplified his previous statement on the accuracy of the present Egon procedure and stated that he had been told it was accurate to 0.3 degrees in bearing and 200/250 metres in range.

Communication with Aircraft

9. The P/W from the Z6+IN was able to add further code words and their meanings to the list given in paragraph 20 of A.D.I.(K) 160/1944.-

	<u>W/T</u>	<u>R/T</u>	<u>Meaning</u>
3 letter code group		Zeppelin	Codes used for
...--...		Originally (Rübezahl)	"control"
		Frage	Question (precedes a codeword if a question is asked)
MAR		Marie	Your distance in minutes from base is ...
	(followed by a number)		...
NTE		Ente	Your distance from the target is ...
	(followed by a number)		decrease speed
SNK		Schnecke (=snail)	increase speed
EXP		Express	Fly in circle
KRS		Karussel (=merry-go-round)	
REI		Reise Reise	Fly on as at present
NAL 1		Kanal 1	(The keyed (morse (recognition) and un-keyed signals
NAL 2		Kanal 2	(respectively of the (FuGe 25A.
CCC		Caruso	No more evasive action to be taken from now (prior to bomb release signal)
AAAMAT+/+		Autobahn+/ Heimat	Set course for base

VVV	Victor	understood
SAL	Trübsal	Have you enough fuel
	(followed by a number)	for....minutes flying
KKK	Ich besuche Sie	you are being plotted
	or	or
	Ich besuche Sie nicht	control finished,
	mehr, bitte kommen	please confirm

+/+ = amendment to previous list.

10. The signals "Schnecke" and "Express" are given by control when the aircraft in ahead of or behind schedule. When control sees that the aircraft will arrive too early, "Schnecke", followed by a number is signalled, meaning "at your present speed you will arrive..... minutes too soon over the target". "Express" is given for the opposite condition.

11. Before the pathfinder aircraft has been released by control the only communication from the aircraft to control is normally by manipulation of the FuGe 25A switch, although if specially requested the aircraft will resort to R/T or W/T. Control frames questions to the aircraft in such a way that they only require an acknowledgement and can therefore be answered by means of the FuGe 25A.

12. The FuGe 25A is switched to Kanal 1 to transmit the morse recognition signal and to Kanal 2 for the unkeyed tone signal. Kanal 1 is employed until the aircraft is within 50 km of the target, Kanal 2 being used whilst the aircraft is near and over the target and under control of Freya No.2. The latter Kanal enables the bearing of the aircraft to be read more accurately.

13. Each signal passed by control to the aircraft must be acknowledged on the FuGe 25A, either on Kanal 1 or 2. In practice, however, crews often forget to acknowledge signals and control therefore requests "Kanal Quittung" and awaits the appropriate reply.

14. When control of an aircraft is being withdrawn, control signals "Ich besuche Sie nicht mehr, bitte kommen" (I have finished with you, please confirm).

Communication Frequencies

15. As an example of R/T and W/T frequencies employed on a pathfinder operation, P/W quoted those used on the night of 24/25th March 1944. These were 40.5 mc/s on FuGe 16 and 4848 kc/s on FuGe 10, besides the 583 kcs of the broadcasting station Calais I.

New Egon Procedure

16. It was stated that certain crews of 5/K.G. 66 had been sent to Königsberg/Neumark for practice with the new Egon procedure.

17. whilst P/W had little to add to his original description of the Egon attachment which will be introduced into operations at some future date, he believed that the presentation apparatus of the ground-control equipment is divided up into sectors in a similar manner to the airborne apparatus.

18. He did not know details of the frequency, other than that it is V.H.F. and crystal controlled.

OTHER NAVIGATIONAL AIDS Bernhardiner Gerät

19. The present P/W were able to add a few small details on this subject to those given in A.D I.(K) 108/1944 paragraphs 37 - 39.

20. In October 1943, 5/K.G. 66 had a Do. 217M equipped with the Bernhardiner Gerät, manufactured by Telefunken. Oberleutnant Grotz and a civilian technician named Menzel or Wenzel conducted some experiments but came to the conclusion that the apparatus was not sufficiently accurate for pathfinder work. It was thought to be accurate enough for the use of bomber units, however, and at that time it was proposed to pass the equipment over to K.G. 6.

21. P/W later overheard the Gruppenkommandeur saying that the project might have been abandoned as work on the ground installations had ceased.

22. One Bernhard (ground station) was known to P/W near Chartres; the apparatus was about 30 metres high and was mounted on a turntable some 40 metres in diameter. Each ground transmitter was to work on a different frequency so that cross bearings could be taken.

23. The aircraft equipment included a Hellschreiber (teleprinter) some 40 cm. square. A paper tape appeared in a window of about 30 cm. in length in the front panel, and every 30 to 60 seconds the true bearing of the aircraft and the time of the bearing appeared on the tape. This equipment, which was thought by P/W to work through the E.B.L.3., is remarkably reminiscent of the Drehelektra described by P/W of the old Gruppe 106 in May 1942 (A.D.I.(K) 104/1942 paragraphs 8 - 15) and later by other P/W of the same unit (A.D.I.(K) 244/1942 paragraphs 11 - 16).

24. The range of the Bernhard was said to have been about 400 km. under ideal conditions.

Erika Gerät

25. Experiments in this navigational aid were conducted in K.G. 66 under the direction of a civilian technician by the name of Voss. The system was abandoned as being too open to enemy countermeasure, and the instruments were withdrawn from the unit. P/W knew no details of how the Erika Gerät functioned.

Y-Gerät

26. P/W stated that 1/K.G. 66 used the 'Y' system as a navigational aid; he had seen the switch for the FuGe. 28A in one of the aircraft of that Staffel.

"X" Clock

27. Early in 1943 P/W saw a number of "X" clocks, of both the larger and the new smaller types, in the technical section of the Staffel. He understood that these were to be employed in conjunction with Hohentwiel for attacking ships. He had heard nothing more of this, however, and recently the "X" clocks were no not to be seen.

Jamming of Knickebein

28. One of the present P/W stated that it was possible for an experienced operator to read through British jamming of Knickebein; he said that the genuine dots and dashes were more pronounced than those produced by the countermeasures.

29. Another type of interference which P/W had experienced with Knickebein took the form of rising and falling wail.

German Jamming of R/T

30. P/W could not enlarge on his previous account of the activities of 3/K.G.66, to which he was attached for six months at Cormeilles-en-Vexin, since during that period the Staffel was still only under training for investigation and countermeasure flights. He stated, however, that the aircraft were equipped with a fixed wire aerial about 1.20 metres in length fitted under the fuselage, and he believed that this aerial was used in conjunction with the Viktor R/T jamming set.

A.D.I.(K)
25/Apr/44

S. D. Felkin
Wing Commander