Wireless Set No 19 Mk.3 (Canadian)

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An early BCC 405
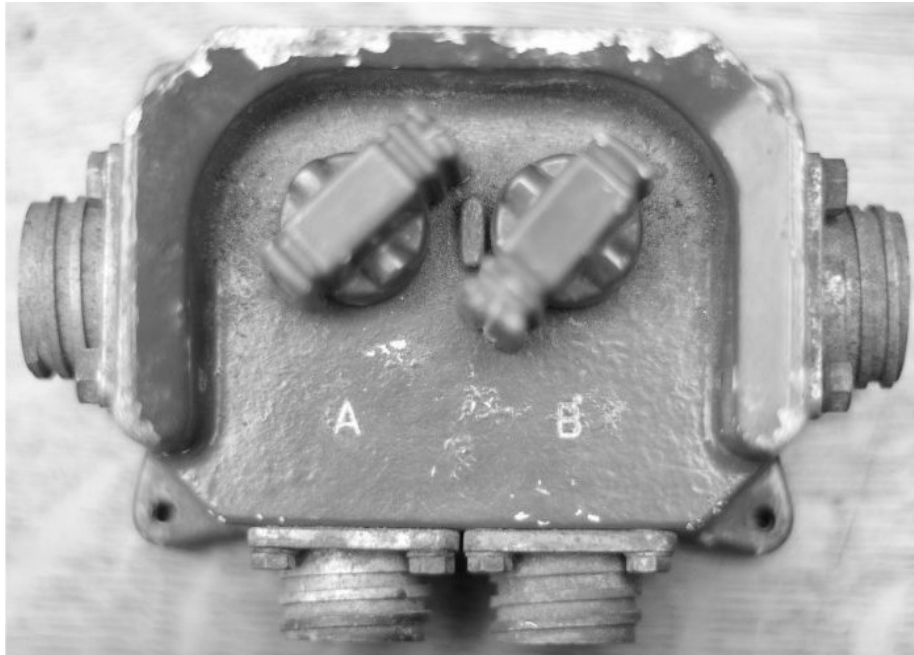
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I have in my possession a BCC 405 which appears to have been made just before or just after the takeover of BCC by Racal in 1969 and and definitely before the merger of BCC with Racal Mobical to form Racal Tacticom in 1975. In 'The Larkspur II and BCC 400-series Radio Control Harnesses' I suggested that the BCC 400 series harness existed before the Larkspur II system and my inspection of the early BCC 405 I have tends to confirm this over the other two suggestions I made. After a re-inspection of the circuit diagrams for the BCC 418/Larkspur II Commander's personal unit, it would certainly explain why a cross over cable was needed to connect the BCC 418 to the Larkspur II A and B harnesses i.e. the BCC 418 is a Commercial Off The Shelf (COTS) item. It was presumably cheaper to make a crossover cable than request a specially modified BCC 418.

Exactly how developed the BCC 400 series was in 1971/2 is unknown to me, but, no doubt, the upcoming introduction of the Clansman system tended to render unlikely the the introduction of a completely new Larkspur harness that would be outdated in four or five years. Therefore the adoption of one new box (the RSB2) and two new personal units with cables, plus some modifications of the A harness by the REME, was probably a much more attractive proposition. Especially as it would allow the introduction of the Clansman headsets two or three financial years before the rest of the clansman system and the retention SI microphones and headphones.

The blank spaces in table 1 in the column headed 'early BCC 405' represent the pins that are not connected when the internal relays are not energised. It can be seen that while the BCC 405 can be connected to a Larkspur B harness, +28v would not be supplied to pin M and, therefore, only the functions shown in the column would be available.
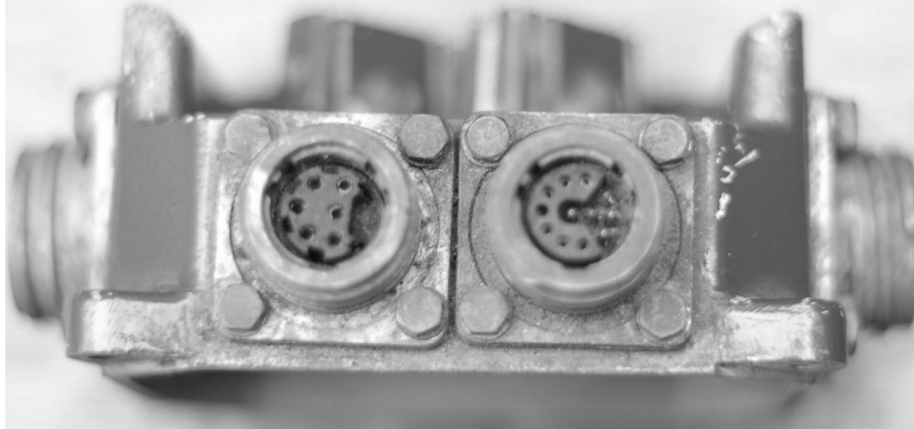
It should be noted in table 2 that the pin outs for the SI No.5 and the Commander's personal unit/BCC418 are the same once the crossover cable has been attached to the Commander's personal unit.

Front face of BCC405

This view show the two gain controls on the front face of the BCC 405. On later versions these controls are placed lower down so that a call button could be placed at the top centre of the front face. (see 'The Larkspur II and BCC 400-series Radio Control Harnesses')

Bottom face of BCC405

On the left is a standard Larkspur pattern 104 6 pin socket. This is presumably used as the alternative pressel socket and this can be achieved by attaching a Larkspur Microphone SI No.1 or 6 (only the intercom would be heard if headphones were attached to it and the microphone could only be used at the same time as the call facility).

On the right is a standard Clansman double density pattern 104 12 pin socket. This is the headset socket and was probably chosen before it was known that the Clansman harness would use it as a standard socket for joining harness boxes together.

The 6 pin socket was replaced by a pattern 105 7 pin socket on later BCC 405 (a standard Clansman headset and pressel can be attached but, as with the 6 pin socket, only the intercom would be heard and the microphone could only be used at the same time as the call facility) and the 12 pin socket was replaced by a pattern 105 10 pin plug (the same socket being used to connect the Commander's Box Fixed and the Commanders Personal Unit on a Clansman Harness).
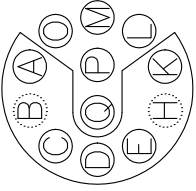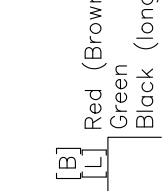
Table 1 Harness PIN OUTS

	J2	RSB2	Early BCC405	Racal BCC405
A)	B Pressel	B Pressel		B Pressel
B)	I/C Phone	I/C Phone	I/C Phone	I/C Phone
C)	A Mic.	A Mic.		A Mic.
D)	A Pressel	A Pressel		A Pressel
E)	Phone Earth ⏚	Phone Earth ⏚	Phone Earth ⏚	Phone Earth ⏚
F)	B Phone	B Phone	B Phone	B Phone
G)	B Mic.	B Mic.		B Mic.
H)	Call	Call	Call	Call
J)	Mic. Earth ⏚	Mic. Earth ⏚	Mic. Earth ⏚	Mic. Earth ⏚
K)	A Phone	A Phone	A Phone	A Phone
L)	I/C Mic.	I/C Mic.	I/C Mic.	I/C Mic.
M)	Voltage Control Relay	Monitor		+28v

Table 2 Headset connection PIN OUTS

	SI No.5	Commander's PU/418	Racal BCC405(410)	Racal BCC403(418)
A)	Mic.	Select B	Relay B	Relay E
B)	Mic. Earth ⏚	Working Phone	A Phone	Phone
C)	Select A	Monitor Relay	I/C Phone	Relay F
D)	Pressel	Monitor Phone	B Phone	Phone
E)	Monitor Relay	Mic. Earth ⏚	Mic. Earth ⏚	Mic. Earth ⏚
F)	N/A	+28v	+28v	+28v
G)	Phone Earth ⏚	Mic.	Mic.	Mic.
H)	Select B	Pressel	Pressel	Pressel
J)	Monitor Phone	Select A	Relay A	Relay A+B+C
K)	N/A	Phone Earth ⏚	Phone Earth ⏚	Phone Earth ⏚
L)	N/A	N/A	N/A	N/A
M)	Working Phone	N/A	N/A	N/A

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BCC405 PIN OUTS

MEDIUM-12 104 SOCKET FACE

A B
C D E F
G H J K
L M

A) N/A
B) I/C Headphone [F]
C) N/A
D) N/A
E) Earth [D] ⏚
F) N/A
G) N/A
H) Call [C]
J) Earth [B] ⏚
K) N/A
L) I/C Microphone [A]
M) N/A

SMALL-12 104 SOCKET FACE

A) Green (Black)
B) I/C Headphone [D]
C) Orange
D) Purple
E) Earth [P] ⏚ Green (Brown)
F) B Gain [K]
G) Blue
H) Call [M]
J) Earth [C] ⏚
K) A Gain [O]
L) I/C Microphone [E]
M) Yellow; Top & Right

SMALL-6 104 SOCKET FACE

A B
C D
E F

A) Yellow, Middle
B) ?
C) Earth [J] ⏚
D) I/C Headphone [B]
E) I/C Microphone [L] ⎰ Red (Brown) / Green / Black (long)
H) ?
K) B Gain [F]
L) Yellow; Bottom
M) Call [H]
O) A Gain [K]
P) Earth [E] ⏚
Q) Black with resistor

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