Notre Dame Journal of Formal Logic
Volume 22, Number 2, April 1981

RMLC: Solution to a Problem Left Open by Lemmon

DOLPH ULRICH

A system S is *Halldén-incomplete* if and only if there are wffs A and B with no variables in common such that $\vdash_S A \vee B$ but neither $\vdash_S A$ nor $\vdash_S B$, and *strongly Halldén-incomplete* if, in addition, A and B have but one variable apiece.* Evidently, all strongly Halldén-incomplete systems are Halldén-incomplete; Lemmon [5] poses the converse as an open problem.

Consider the system *RMLC*, with detachment and adjunction as rules and, using standard conventions concerning relative binding strengths of connectives and omission of parentheses, the following axiom schemes:

R0	$A \to (A \to A)$
R1	$A \to A$
R2	$(A \to B) \to ((B \to C) \to (A \to C))$
R3	$A \to ((A \to B) \to B)$
R4	$(A \to (A \to B)) \to (A \to B)$
R5	$A \,\&\, B \to A$
R6	$A \,\&\, B \to B$
R7	$(A \to B) \,\&\, (A \to C) \to (A \to (B \,\&\, C))$
R8	$A \to A \vee B$
R9	$B \to A \vee B$
R10	$(A \to C) \,\&\, (B \to C) \to ((A \vee B) \to C)$
DUMMETT	$(A \to B) \vee (B \to A)$
R11	$A \,\&\, (\underline{B} \vee C) \to (\underline{A} \,\&\, B) \vee C$
R12	$(A \to \overline{B}) \to (B \to \overline{A})$
PRE TRANS	$(\underline{A} \to (\overline{B} \to A)) \to (A \to (\overline{A} \to B))$
RMLC	$(\overline{\overline{A}} \to A) \vee (B \to (C \to B))$.

*The author wishes to thank N. D. Belnap, Jr., J. M. Dunn, and the anonymous referee for several suggestions for improving the presentation of this paper.

Received December 27, 1978; revised November 3, 1980