

# RADAR COVER DIAGRAMS

*for*

## A.M.E.S. TYPES

1, 6MK. 3 & 8, 7, 11MK. 4,

14MK. 6, 15MK. 2, 27

## 50 SERIES

HQ. NO 90 GROUP,  
R. A. F.

FEBRUARY 1950.

RADAR COVER DIAGRAMS FOR A.M.E.S. TYPES

1. The cover diagrams contained in this folder have been derived from the latest available information and, where possible, have been adjusted by the incorporation of recent test flight results. Recent flights have been conducted by this Headquarters on A.M.E.S. Types 1, 7, 14 Mk.6 and 15 Mk.3.

2. The diagrams have been drawn on the assumption that:-

- (i) The signal to noise ratio is one ( $Z = 1$ ) for floodlit stations (AMES Type 1)  
" " " " " 3:2 ( $Z = 1\frac{1}{2}$ ) for beam stations.
- (ii) The comparative Aircraft echoing areas are:-

Meteor	-	10
Mosquito	-	19
B29	-	180

- (iii) Conditions of normal atmospheric refraction prevail
- (iv) The effective radius of the earth is 4307 nautical miles (4960 statute miles)
- (v) The Types 1, 6, 11, and 15 are sited on flat sites.

3. In making any practical application of the diagrams, the following points should be considered:-

- (i) ~~With aerials rotating at 6 revs. per minute, normal pick-up will be at a signal to noise ratio of 3:2 ( $Z = 3/2$ ). Ranges in practise will consequently, be reduced by approximately 10%.~~
- (ii) The cover produced by radar equipments is affected by the site and aerial heights. These effects have been worked out in detail for A.M.E.S. Types 6, 11 and 15 and are listed in the Air Publications mentioned on these diagrams.
- (iii) The cover produced by A.M.E.S. Type I will vary according to site height and azimuth, and must be derived in detail for each station.

H.Q. No. 90 Group.  
R.A.F.  
February 1950.

J.E.F.  
A.A.M.

RADAR COVER DIAGRAMS  
FOR  
AIR MINISTRY EXPERIMENTAL STATIONS

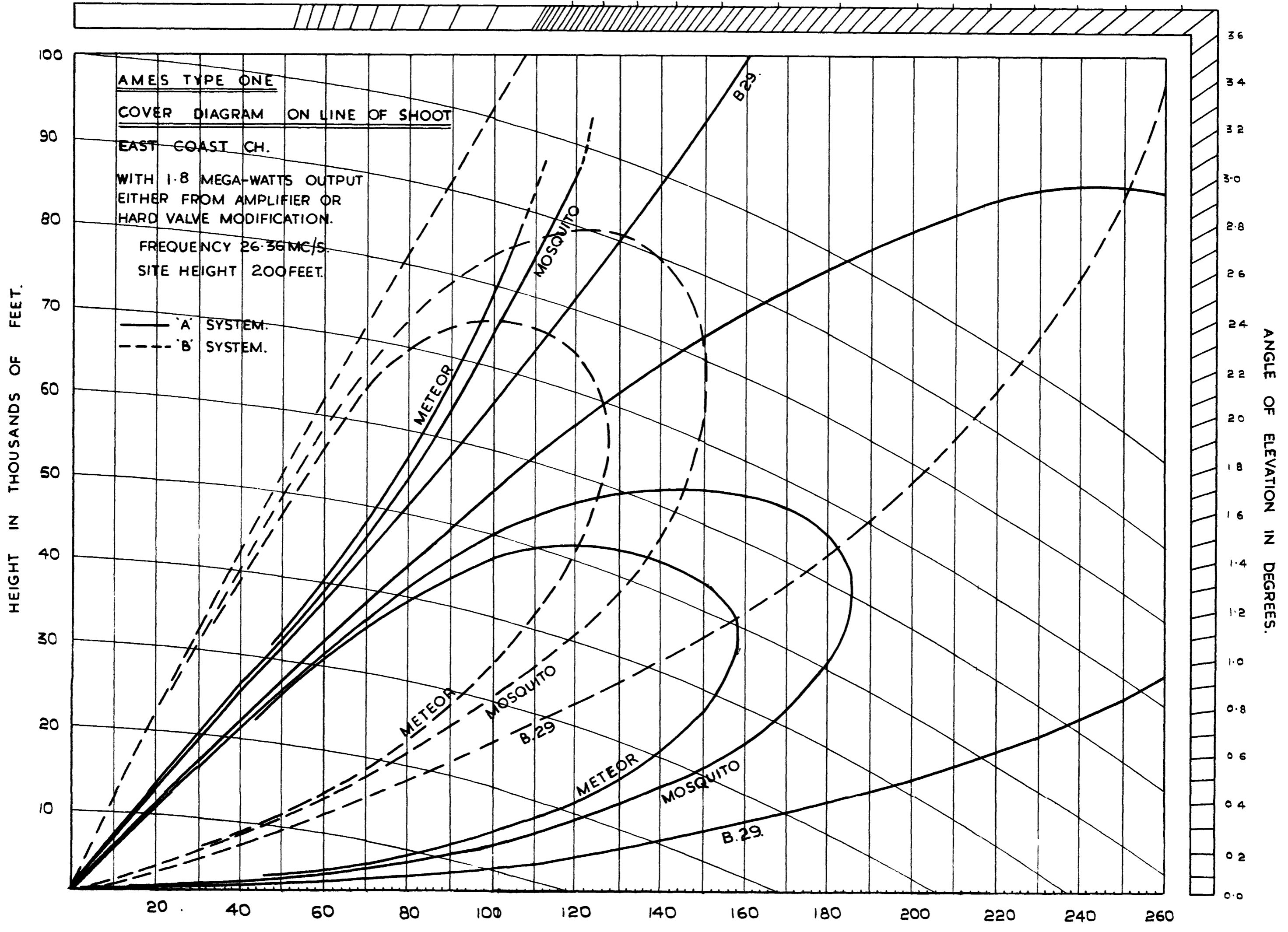
CONTENTS :

- A.M.E.S. Type 1
- A.M.E.S. Type 6 Mk.3
- A.M.E.S. Type 6 Mk.8
- A.M.E.S. Type 7
- A.M.E.S. Type 11 Mk.4
- A.M.E.S. Type 14 Mk.6
- A.M.E.S. Type 15 Mk.2
- A.M.E.S. Type 27
- A.M.E.S. Type 50 series
- A.M.E.S. Type 70 Mk.3 & 4

H.Q. No. 90 Group  
R.A.F.

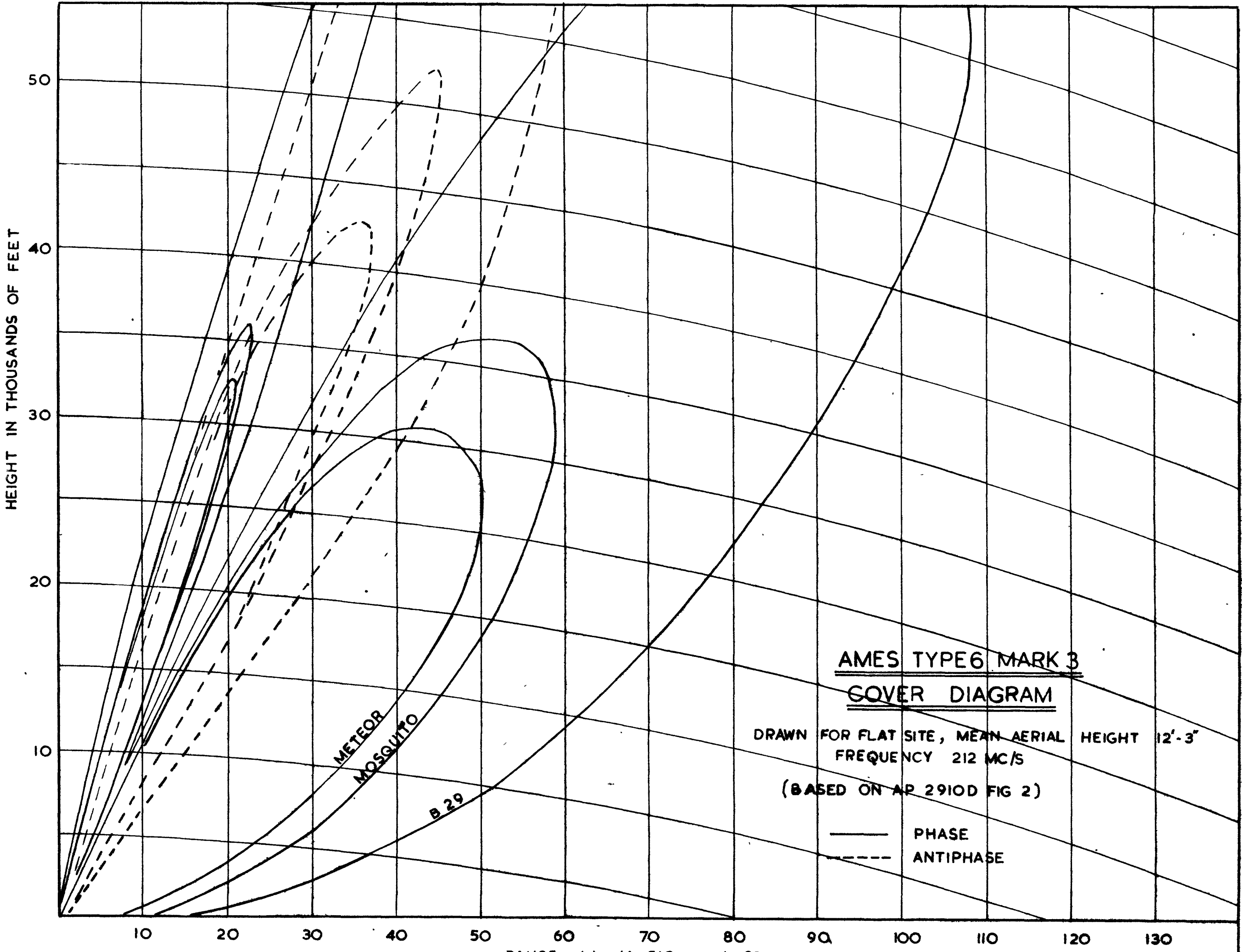
February 1950.

180 160 140 120 100 90 85 80 75 70 65 60 55 50 48 46 44 42 40 38



DRAWING NO CAL/90/65.

DRAWN	TRACED	DATE
u&lwf <sub>c</sub>	<i>[Signature]</i> 4/50	30.1.50



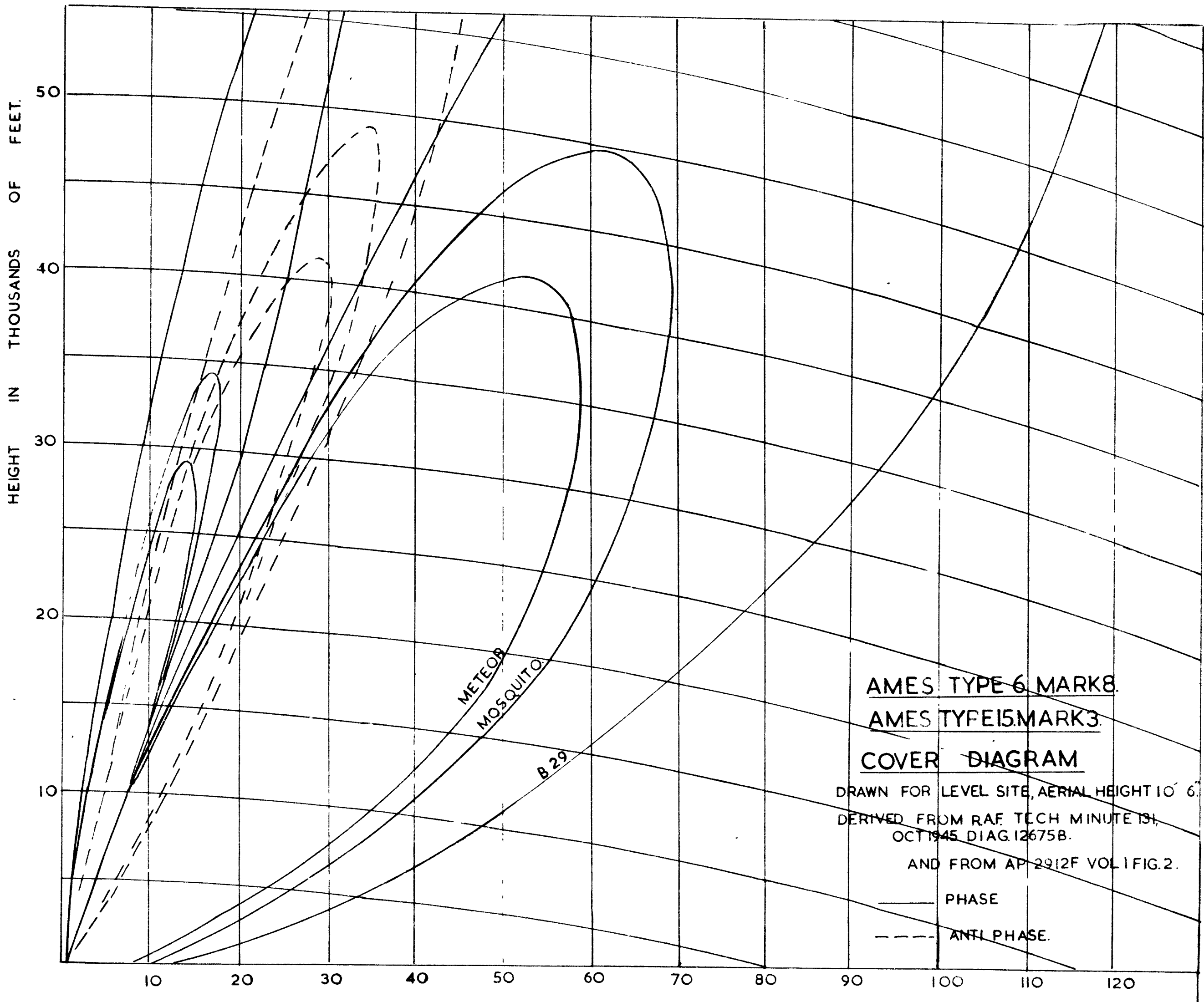
AMES TYPE 6 MARK 3  
COVER DIAGRAM

DRAWN FOR FLAT SITE, MEAN AERIAL HEIGHT 12'-3"  
FREQUENCY 212 MC/S  
(BASED ON AP 2910D FIG 2)

—— PHASE  
- - - - ANTIPHASE

RANGE IN NAUTICAL MILES

DRAWN	TRACED	DATE
J.E.F.	P.J.N.A.	10/1/50



AMES TYPE 6 MARK 8.

AMES TYPE 15 MARK 3.

COVER DIAGRAM

DRAWN FOR LEVEL SITE, AERIAL HEIGHT 10' 6".

DERIVED FROM RAF TECH MINUTE 131,  
OCT 1945 DIAG 12675B.

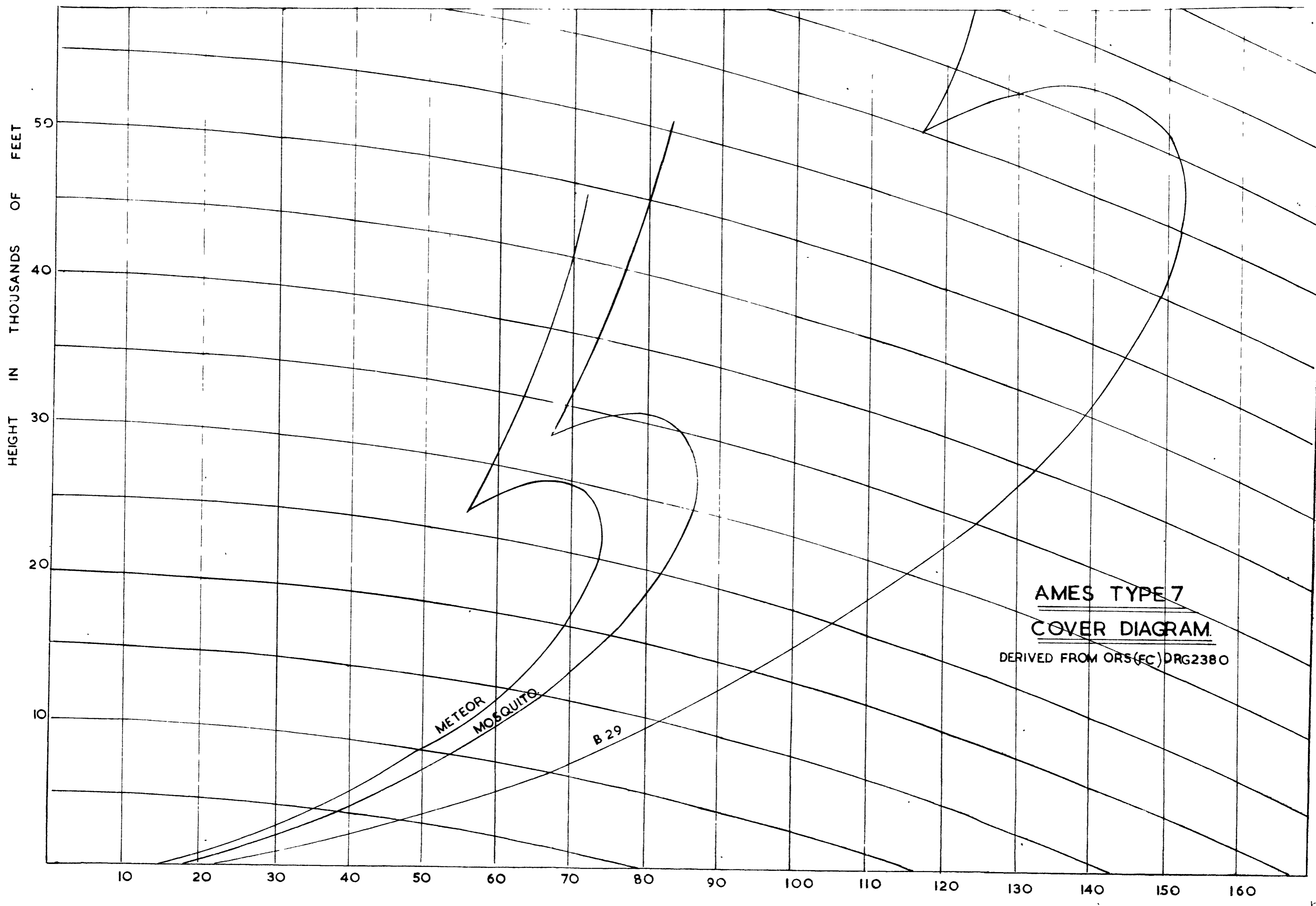
AND FROM AP 2912F VOL 1 FIG. 2.

— PHASE  
- - - ANTI PHASE.

DRAWING No CAL/90/59

RANGE IN NAUTICAL MILES.

DRAWN	TRACED	DATE
J.E.F.	P.B.H.S	23 1'50

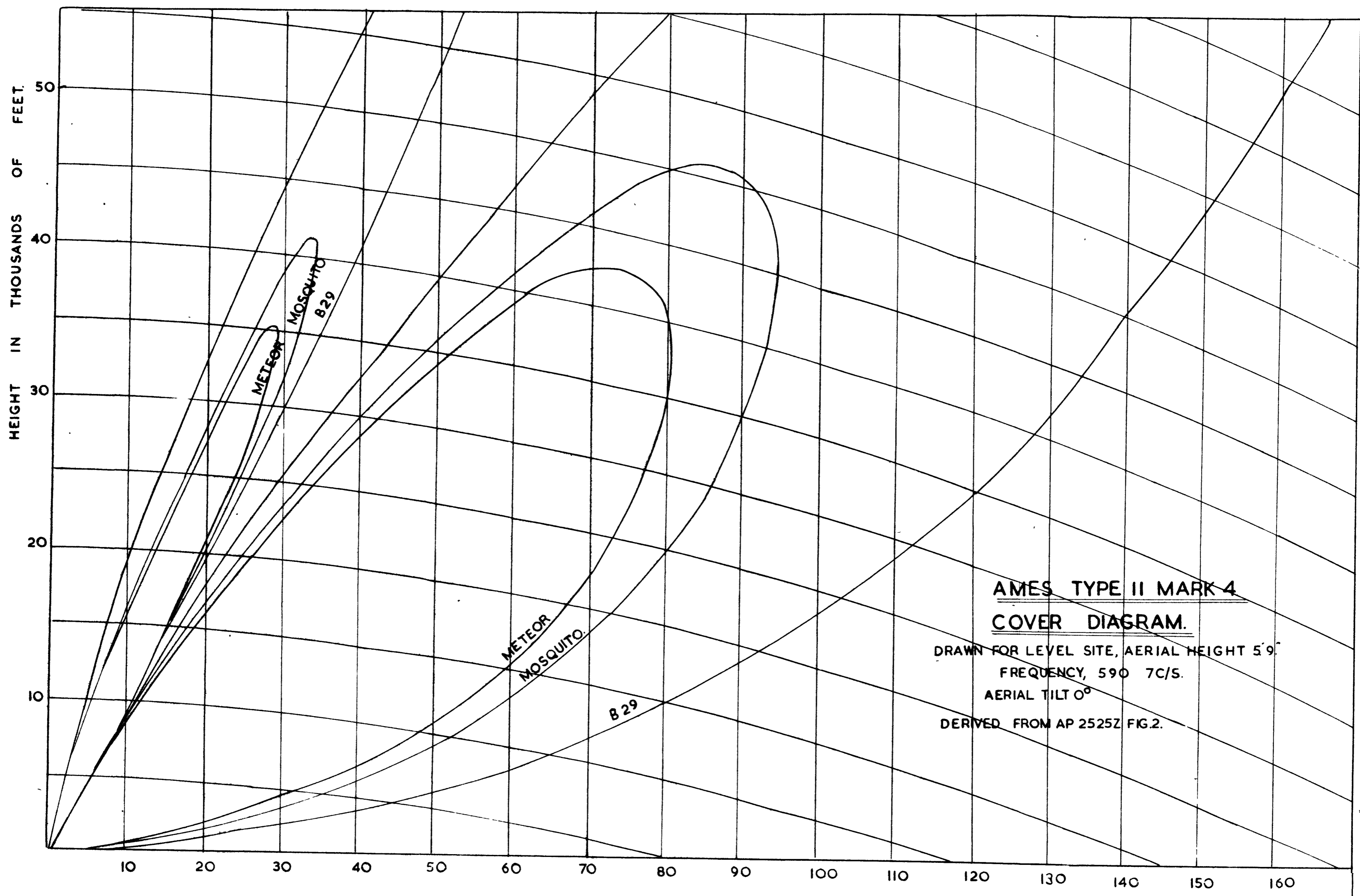


AMES TYPE 7  
COVER DIAGRAM  
 DERIVED FROM ORS(FC) PRG2380

CAL/90/64

RANGE IN NAUTICAL MILES.

DRAWN	TRACED	DATE
J.E.F.	P.L.S.	27.1.50.



**AMES TYPE II MARK 4  
COVER DIAGRAM.**

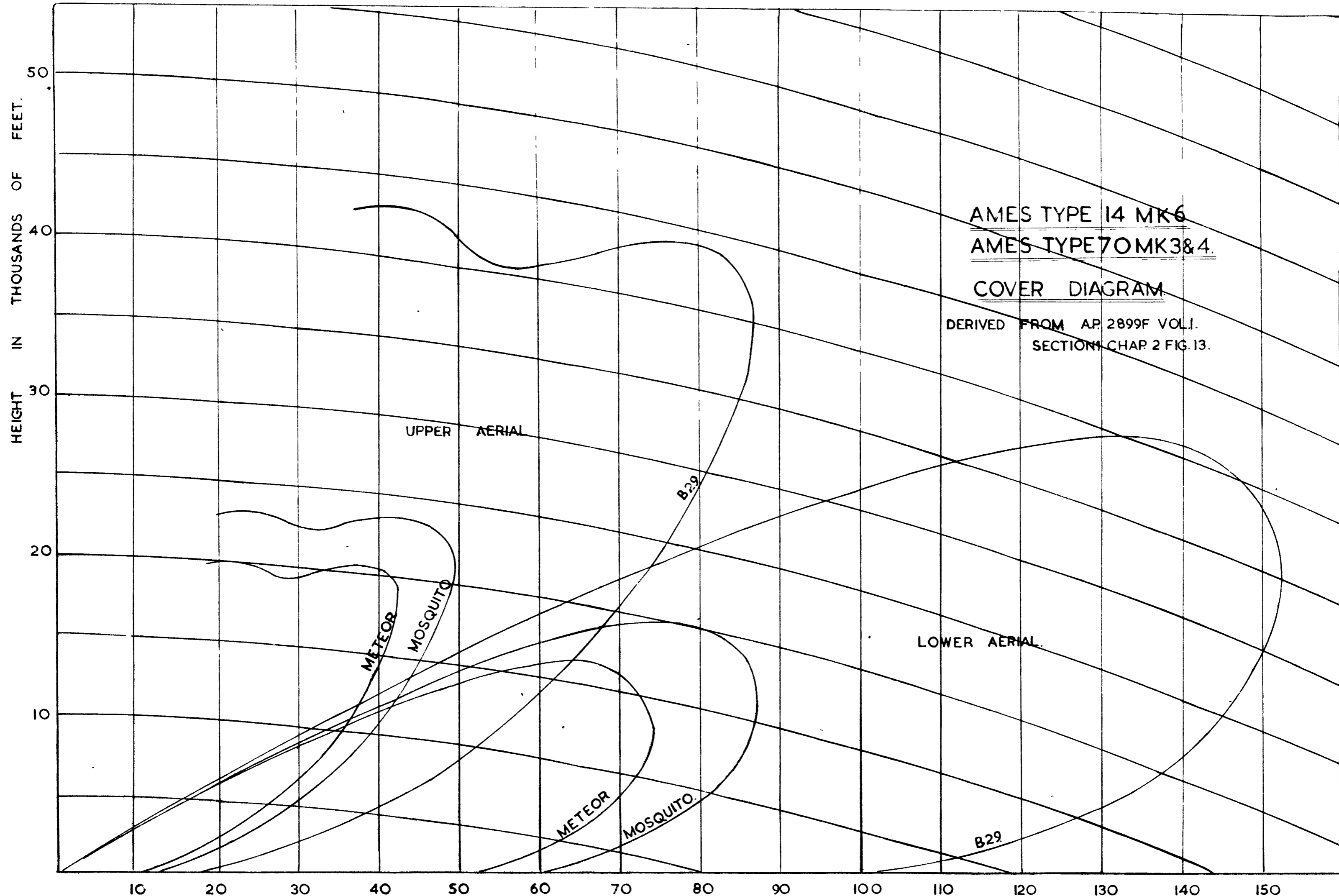
DRAWN FOR LEVEL SITE, AERIAL HEIGHT 5'9"  
 FREQUENCY, 590 MC/S.  
 AERIAL TILT 0°  
 DERIVED FROM AP 2525Z FIG.2.

DRG No CAL/90/62

RANGE IN NAUTICAL MILES.

DRAWN	TRACED	DATE
J.E.F.	P.S.H.S.	21/1/50





AMES TYPE 14 MK 6  
 AMES TYPE 70 MK 3 & 4.  
COVER DIAGRAM

DERIVED FROM AP 2899F VOL. I.  
 SECTION CHAP 2 FIG. 13.

UPPER AERIAL

LOWER AERIAL

METEOR

MOSQUITO

METEOR

MOSQUITO

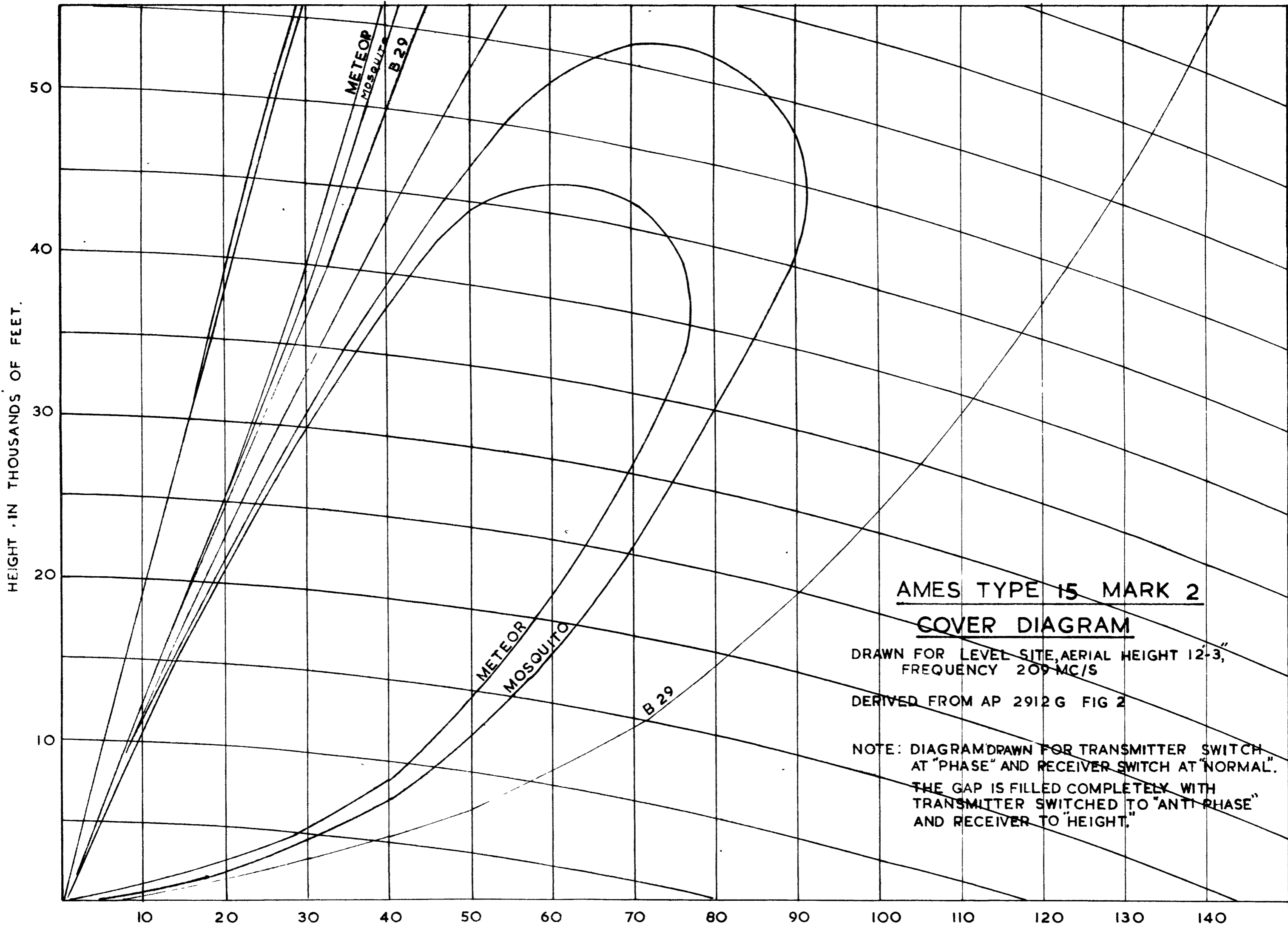
B29

B29

DRG No CAL/90/63.

RANGE IN NAUTICAL MILES.

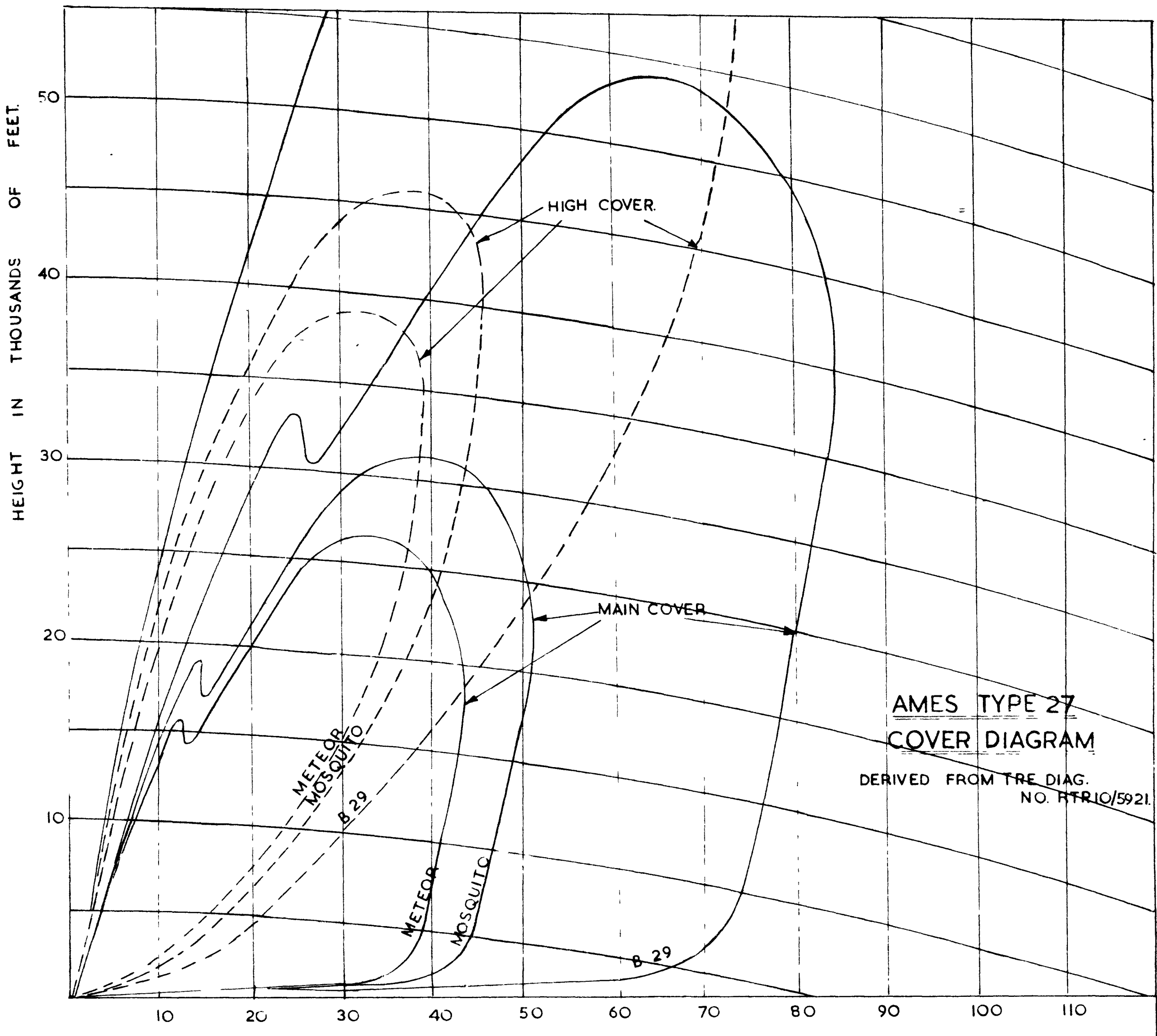
DRAWN	TRACED	DATE
J.E.F.	P.S.M.S.	19:1'50.



DRG No CAL/90/61

RANGE IN NAUTICAL MILES.

DRAWN	TRACED	DATE
J.E.F.	P.J.N.A.	13/1/50



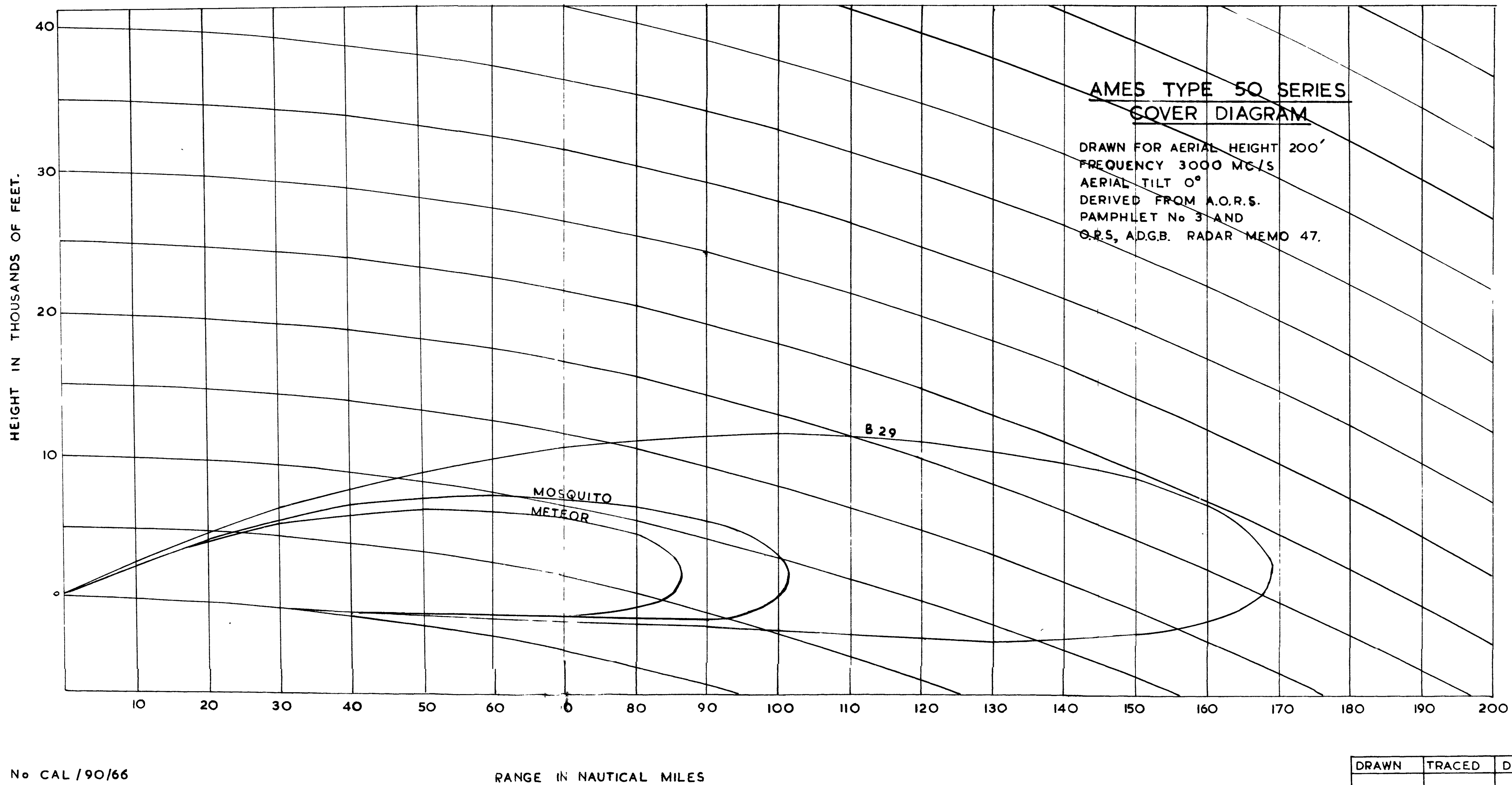
**AMES TYPE 27  
COVER DIAGRAM**

DERIVED FROM TRE DIAG.  
NO. RTR10/5921.

DRG No. CAL/90/60

RANGE IN NAUTICAL MILES.

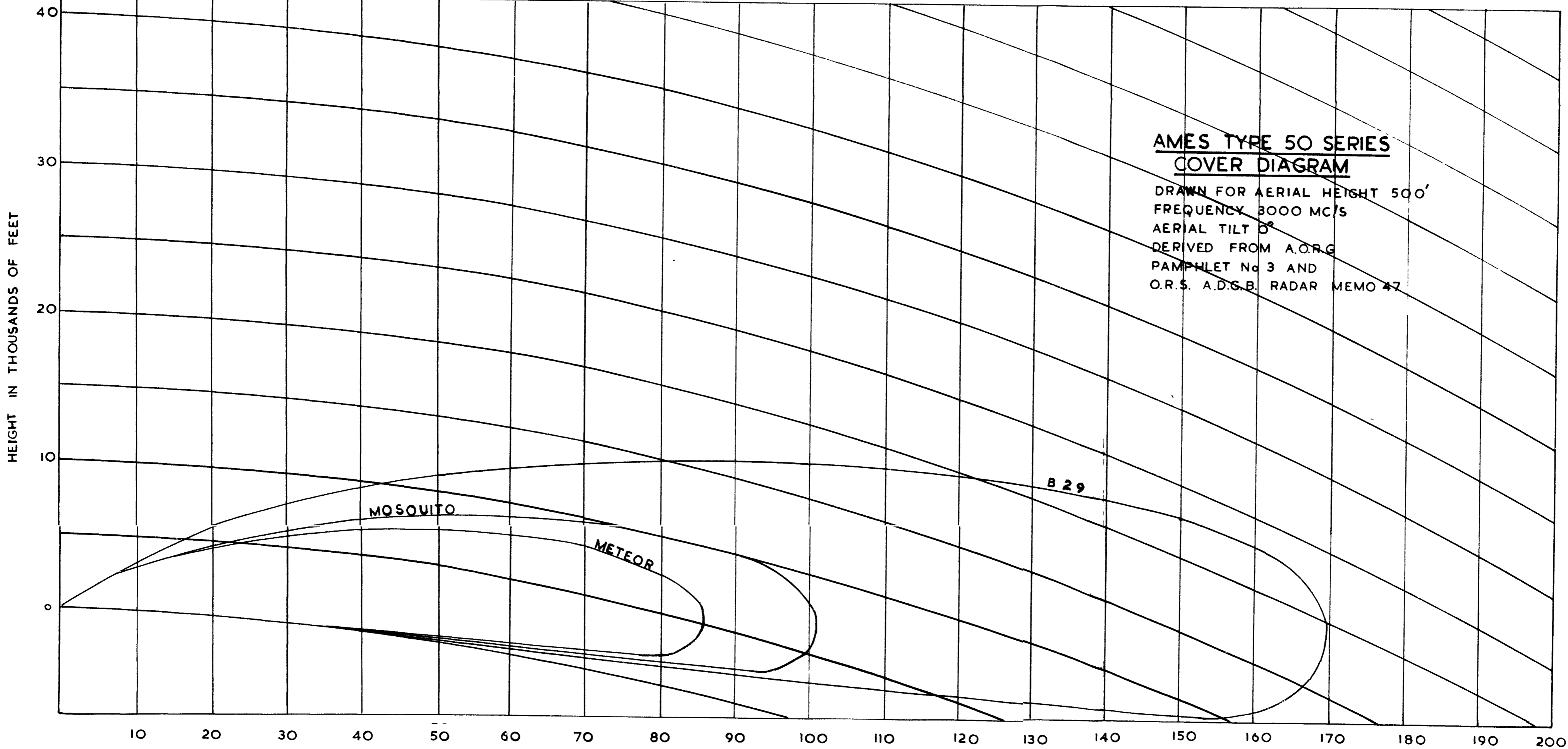
DRAWN	TRACED	DATE
J.E.F.	PLM S.	26/1/50



DRG No CAL/90/66

RANGE IN NAUTICAL MILES

DRAWN	TRACED	DATE
<i>W. H. P.</i>	P. J. A.	4-2-50



**AMES TYPE 50 SERIES  
COVER DIAGRAM**

DRAWN FOR AERIAL HEIGHT 500'  
 FREQUENCY 3000 MC/S  
 AERIAL TILT 0°  
 DERIVED FROM A.O.R.G.  
 PAMPHLET No 3 AND  
 O.R.S. A.D.G.B. RADAR MEMO 47

DRG No CAL/90/67

RANGE IN NAUTICAL MILES

DRAWN	TRACED	DATE
<i>[Signature]</i>	P. J. A.	4-2-50