SECRET

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AVIA 18/715

1st Part of Report No. A. & A.E.E./766, e

27 MAY 1944

AIRCRAFT AND ARMAMENT EXPERIMENTAL ESTABLISHMENT
BOSCOMBE DOWN

UNCLASSIFIED

Lancaster X KB. 721
(4 Merlin 38)

Weight data

A. & A.E.E. ref: CTO/AM. 62/23
M.A.P. ref: SB. 39211/RDL.6/A.

This report deals with the aircraft as tested. Action to remedy defects or decision to accept items not in strict compliance with the specification are matters for decision and action by the M.A.P.

STOCK
DATE 17/12/52 15

REDUCE TO 12
AUTHORISED JJ
DATE 18.12.52

1. Introduction.

The results of weighing and centre of gravity determination in order to determine the Tare weight of the Canadian built Lancaster X which is the equivalent of the British built Lancaster III are included in this Part of the Report.

2. Tare weight.

The aircraft was weighed, checked to Appendix "A" Serial No. 3094 A.L's Nil, and the centre of gravity determined. The result thus obtained was reduced to Tare condition by calculation with the following result.

Tare weight	35,700 lb.
Centre of gravity	46.5" aft of datum

3. General.

3.1 In Appendix I the reduction to Tare weight and centre of gravity is given in detail.

3.2 The state of modification at the time of weighing is given in Appendix II.

3.3 The weighing and centre of gravity determination was witnessed by Mr. Sutton of Messrs. A.V. Roe Ltd. who has agreed the result quoted in para. 2.

APPENDIX I

Reduction to Tare Weight and Centre of Gravity in accordance with App. "A" Serial No. 3094, A.L's - Nil

Item	Weight	Arm relative to datum		Moment about datum	
		In front	behind		
	lb	Dist. -	+ Dist	Moment -	+ Momen
Condition of aircraft as weighed and C.G'd	53920		52.2		2814620
Deduct for "removable" items on					
Guns & sight (nose)	46.5	200			9300
" " (centre)	46.5		312	14510	
" " (tail)	92		580	53360	
Bomb carriers (6)	109.5	68.8			7530
" " (2)	36.5		46	1680	
" distributor	6.5	200			1300
Bombsighting head	16.25	216			3510
B.S. computor	62.25	180			11205
Drift recorder	4.25	60			2550
Oxygen cylinders (15)	325.4		85	27660	
Bomb door air cylinder	17.4	130			2260
Dinghy etc.	56.25		125	7030	
TR. 1196	35		126	4410	
TA. 120	70.5	25			1760
RA. 10 DB	32.7	70			2290
Radio compass receiver	37.4	60			2245
Amplifier 36118	9.5	25			240
Blind Approach sets	48	120			5760
R.43 AAY (R. 3003)	30.5		235	7170	
Ballast at tail	219		575	125925	

cont.

Courtesy of Neil Stirling

Item	Weight lb.	Arm relative to datum		Moment about datum	
		In front Dist -	Behind + Dist	Moment -	+ Moment
Fuel					
No.1's - 1160 at 7.27 lb/g	8433		59	497545	
2's - 766 at " "	5569		60	334140	
3's - 228 at " "	1656		71	117600	
Oil					
140 galls at 9.0 lb/gall.	1260		11	13860	
				1204890	2864570
					-1204890
Tare weight and C.G.	35700		46.5"		1659680

APPENDIX II

State of modification of aircraft at time of weighing.

Lancaster Mods.

397,399,410,412,413,415,424,432,435,436,446,447,457,459,461,463,465,466,
467,468,470,471,473,476,482,484,485,489,490,493,494,498,499,500,501,502,504
507,509,510,518,519,521,523,531,532,536,537,539,541,543,544,550,551,553,
554,557,559,562,565,570,574,584,585,586,589,598,602,605,612,613,617,619,630
640,643,651,660,661,666,668,674,676,677,681,682,684,696,704,707,708,713,
715,722,723,724,728,731,732,735,744,754,755,756,758,782,787,772,795,797,
807.810,811,814,816,819,823,824,848,891,440,495,505,608,678,705,703,717,
739,757,773,801,845,846,870,872,881,882,884,896,928,974,1084

Canadian Mods.

2,3,10,11,13,14,15,18,19,22,28,29,33,35,36,39,44,46,47,49,51,54,59,64,65,
68,73,76,83,91,92,94,100,57,66,98,99,163,104,116,118,122,127,126,130,135,
146.

Mods. by 20 M.U.

1106, BC.22, 462,1007,685,468,680

Special Technical Instruction fulfilled.

RDA.660, T411, BC.30, RDA.446, BC.5, RDA.561, SM.131, SM.111, TX.5278 at 20 M.U.

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