



**THE CHRISTMAS "BULLET."**—Details of the fuselage and tail group.

obstruction to vision. Although military necessity does not now demand the adoption of the machine as a fighter, it lends itself admirably to the needs of civilian uses. The planes are readily detachable and are easily set up, as there are no wires to align. When the planes are removed, they can be strapped alongside of the fuselage and the machine then takes up only about one-fifth of the room ordinarily required for storage. The machine can be rigged up ready for flight in 15 minutes.

All the controls are exceptionally easy in their operation. The tail is flexible, and its efficiency is illustrated by the fact that a 1 in. deflection causes a controlling moment equal to that produced by a rigid flap movement of 4 in.

The two main tail beams are 1½ in. by 1¼ in. laminated

spruce. A horizontal V section spruce leading edge is used. The battens are air-seasoned white ash.

Ackerman spring wheels are used, which cut down resistance and do away with the usual rubber shock absorber cord.

The principle of radiation is original. Besides the nose radiator of the "Livingston" type, copper mesh screens cover in the sides and top of the fuselage, forward of the wings, and this surface has proven adequate for the Liberty "6." Much of the radiation is thereby effected by skin friction rather than by dead head resistance.

The propeller was designed by Mr. Caldwell at McCook Field, Dayton, Ohio. It has a 10 ft. 6 in. pitch and is 7 ft. in diameter, designed for a speed of 195 miles an hour, which the machine is expected to make with full power.

## REPATRIATED

The following R.F.C. officers who were prisoners of war in Germany, have been released and have arrived in England. Where an officer was seconded, his original unit is indicated in brackets:—

Davies, Lieut. T. E. H. (K.R.R.C.).	King, Capt. D. B.
Edwards, Sec. Lieut. G. R.	MacTavish, Sec. Lieut. D. (Cam. Highrs.).
Gilbert, Sec. Lieut. R. S.	McDonald, Lieut. H. O.
Graham, Lieut. L. N. (W. Yorks.).	McPherson, Lieut. R. C. (Bl. Watch).
Jackson, Lieut. R. R. W. (R. Fus.).	Owen, Lieut. H. W.
James, Capt. C. E. H. M.C. (Welsh R.).	Rawson-Shaw, Capt. K. (R.F.A.).
Joyce, Lieut. W. (Bedf. R.).	

The following officers of the R.A.F. have been repatriated:—

King, Capt. D. B.	Patenaude, Lieut. J.
Marshall, Lieut. N. H.	Silk, Lieut. R. W.
O'Leary, Lieut. D. A.	Wedgwood, Lieut. F. C. B.
Owen, Lieut. H. W.	Whiteside, Capt. H. S.
Paine, Capt. L. P.	

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Bridger, Sec. Lieut. H.	Mansell-Moullin, Lieut. O.
Broadbent, Lieut. G.	Murray, Lieut. D. C. G.
Cawley, Sec. Lieut. C. F.	Pugh, Sec. Lieut. J.
Cook, Sec. Lieut. L. C. L.	Radley, Lieut. J. E.
Foster, Capt. W. E.	Richardson, Capt. G. A.
Hall, Sec. Lieut. B.	Shackleton, Sec. Lieut. W.
Hartley, Sec. Lieut. H.	Sitch, Lieut. J. E.
Holland, Lieut. E. V.	Thomas, Sec. Lieut. H.
Hudson, Capt. A. R.	Vickers, Sec. Lieut. J. B.
Jeffkins, Sec. Lieut. E. C.	Wilson, Capt. C. B., M.C.
Macnamara, Sec. Lieut. J. F.	Wren, Sec. Lieut. H. L.
Macpherson, Sec. Lieut. J. M.	

Published January 31

Bennett, Lieut. R. C., D.F.C.	Doyle, Capt. J. E.
Bradford, Sec. Lieut. W. W.	Earle, Sec. Lieut. R. J.
Bradley, Lieut. D. E.	Hibbert, Sec. Lieut. J. R.
Brandrick, Sec. Lieut. A.	Hudson, Capt. F. N., M.C.
Briggs, Capt. H. R.	King, Sec. Lieut. P.
Brisbin, Lieut. H. V.	Kiteley, Lieut. A.
Brumell, Lieut. H. P.	McDonald, Sec. Lieut. J. C. J.
Calvert, Sec. Lieut. T. W.	Pratt, Sec. Lieut. A. R.
Clark, Lieut. H. J.	Russell, Lieut. H. W.
Dawson, Sec. Lieut. E.	Shipton, Sec. Lieut. G. A.
Dougan, Sec. Lieut. W. L.	Swann, Sec. Lieut. T. H.

Published February 1

Amory, Lieut. W.	Forrest, Lieut. L. H.
Anslow, Sec. Lieut. F. F.	Goffe, Sec. Lieut. W.
Awde, Lieut. I. W.	Haight, Lieut. J. L.
Ayrton, Capt. F. A.	Henty, Maj. E.
Castle, Lieut. G. L.	Hewat, Sec. Lieut. H. B.
Chase, Sec. Lieut. D. E.	Highwood, Capt. S. W., D.F.C.
Coward, Lieut. S. R.	Houlgrave, Sec. Lieut. C.
Crawford, Sec. Lieut. W. I.	Hubbard, Capt. W. R.
Crichton, Sec. Lieut. A. C.	Judkin, Sec. Lieut. O. V.
Croxall, Capt. E. R. T.	Knight, Lieut. C.
Culley, Capt. G. C. H.	McGreeth, Capt. J.
Culver, Sec. Lieut. D. E.	Mackereth, Capt. J.
Draisey, Lieut. A. S.	Main, Lieut. R.
Falkenburg, Lieut. G. D.	Matheson, Lieut. A. M.
Foggo, Lieut. N. O. M.	

Published February 1

Coomer, Sec. Lieut. F. H. V.	Searle, Sec. Lieut. R. J.
Dalzell, Capt. W. A. K.	Slipper, Lieut. R. A.
Gaze, Lieut. I. O.	Sparkes, Lieut. C. P.
Hancock, Sec. Lieut. C.	Stanley, Lieut. J. C.
Madge, Lieut. J. B. C.	Steele, Sec. Lieut. T. M.
Miles, Lieut. A. A.	Stevenson, Lieut. L. G.
Millard, Capt. B. A.	Taylor, Lieut. J. C.
Morris, Lieut. E. J.	Tennant, Sec. Lieut. P. S.
Norcross, Lieut. B.	Thresher, Sec. Lieut. C. E. W.
Norris, Sec. Lieut. E. J.	Touchstone, Lieut. G. R.
Parkes, Lieut. G. A. H., M.C.	Walker, Lieut. J. C.
Reveley, Lieut. P. T. A.	Walrond-Skinner, Capt. D. D.
Scharff, Sec. Lieut. R. L.	Wilcox, Sec. Lieut. C. H.

Published February 3

Bailey, Capt. F. J.	Ohrt, Lieut. F. M.
Chaloner, Capt. T. W. P. L.	Pym, Lieut. F. G.
Graham, Lieut. L. N.	Riley, Sec. Lieut. E. I.
Gray, Sec. Lieut. W. J.	Simons, Lieut. A. T.
Hankin, Capt. H. M.	Speagell, Sec. Lieut. H. M. D.
Heine, Lieut. R. W.	Sproule, Lieut. E. R. L.
Lansdale, Sec. Lieut. H.	Stead, Lieut. M. W. B.
McDonald, Lieut. H. O.	Sydie, Lieut. J. E.
McDonald, Lieut. J. J.	Thompson, Lieut. C. W. M.
Mills, Sec. Lieut. F. G.	Turner, Lieut. K. K.
Mulhall, Sec. Lieut. H. F.	Watts, Lieut. R.