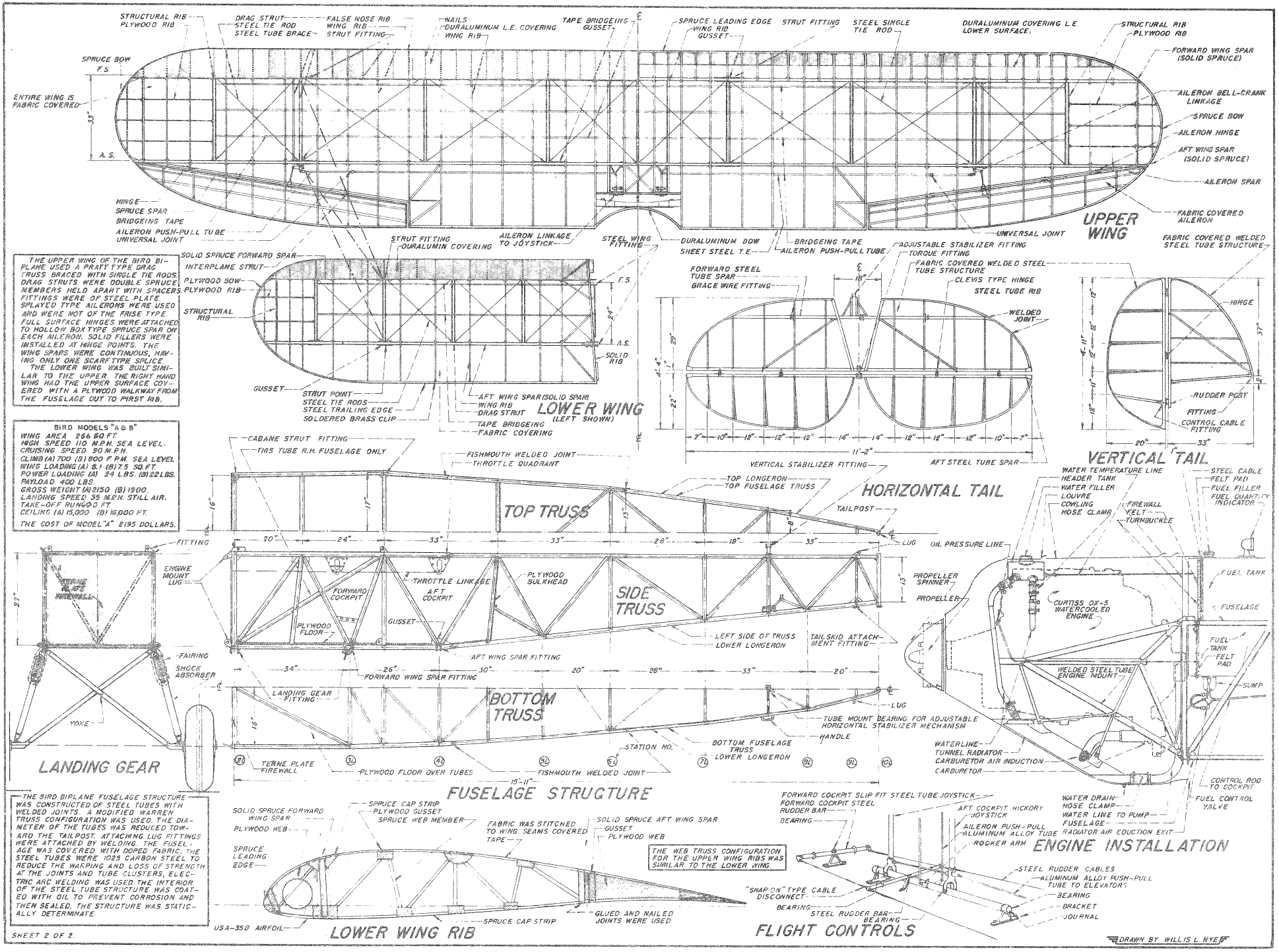
UPPER WING
LOWER WING (LEFT SHOWN)
HORIZONTAL TAIL
VERTICAL TAIL
TOP TRUSS
SIDE TRUSS
BOTTOM TRUSS
LANDING GEAR
FUSELAGE STRUCTURE
LOWER WING RIB
FLIGHT CONTROLS
ENGINE INSTALLATION
THE UPPER WING OF THE BIRD BIPLANE USED A PRATT TYPE DRAG TRUSS BRACED WITH SINGLE TIE RODS. DRAG STRUTS WERE DOUBLE SPRUCE MEMBERS HELD APART WITH SPACERS. FITTINGS WERE OF STEEL PLATE. SPLAYED TYPE AILERONS WERE USED AND WERE NOT OF THE FRISE TYPE. FULL SURFACE HINGES WERE ATTACHED TO HOLLOW BOX TYPE SPRUCE SPAR ON EACH AILERON. SOLID FILLERS WERE INSTALLED AT HINGE POINTS. THE WING SPARS WERE CONTINUOUS, HAVING ONLY ONE SCARF TYPE SPLICE.
THE LOWER WING WAS BUILT SIMILAR TO THE UPPER. THE RIGHT HAND WING HAD THE UPPER SURFACE COVERED WITH A PLYWOOD WALKWAY FROM THE FUSELAGE OUT TO FIRST RIB.
BIRD MODELS "A & B"
WING AREA 266 SQ FT.
HIGH SPEED 110 M.P.H. SEA LEVEL.
CRUISING SPEED 90 M.P.H.
CLIMB (A) 700 (B) 800 F.P.M. SEA LEVEL
WING LOADING (A) 8.1 (B) 7.5 SQ.FT.
POWER LOADING (A) 24 LBS. (B) 22 LBS.
PAYLOAD 400 LBS.
GROSS WEIGHT (A) 2150 (B) 1900.
LANDING SPEED 35 M.P.H. STILL AIR.
TAKE-OFF RUN @ 0 FT.
CEILING (A) 15,000 (B) 16,000 FT.
THE COST OF MODEL "A" 2195 DOLLARS.
THE BIRD BIPLANE FUSELAGE STRUCTURE WAS CONSTRUCTED OF STEEL TUBES WITH WELDED JOINTS. A MODIFIED WARREN TRUSS CONFIGURATION WAS USED. THE DIAMETER OF THE TUBES WAS REDUCED TOWARD THE TAILPOST. ATTACHING LUG FITTINGS WERE ATTACHED BY WELDING. THE FUSELAGE WAS COVERED WITH DOPED FABRIC. THE STEEL TUBES WERE 1025 CARBON STEEL TO REDUCE THE WARPING AND LOSS OF STRENGTH AT THE JOINTS AND TUBE CLUSTERS. ELECTRIC ARC WELDING WAS USED. THE INTERIOR OF THE STEEL TUBE STRUCTURE WAS COATED WITH OIL TO PREVENT CORROSION AND THEN SEALED. THE STRUCTURE WAS STATICALLY DETERMINATE.
THE WEB TRUSS CONFIGURATION FOR THE UPPER WING RIBS WAS SIMILAR TO THE LOWER WING.
DRAWN BY WILLIS L. NYE
SHEET 2 OF 2.

BIRD BIPLANE

MANUFACTURED BY THE:

BRUNNER-WINKLE AIRCRAFT CORP.

GLENDALE, BROOKLYN NEW YORK

(SHEET NO. 1 OF 2)

DRAWN BY WILLIS L. NYE