Gliding . . .

Lincolnshire. May 22nd was another non-competition day, despite valiant attempts by one or two entrants, followed by a good day on 23rd May, which proved to be the fourth and last day of competition flying. The task set on this occasion was Distance along a line from Lasham through Sutton Bank in Yorkshire. Many pilots made excellent flights in conditions which became increasingly better the farther north they got. Best flight of the day was by Dr. Brennig James (Skylark 3) who eventually landed, because of failing light, at South Shields—a distance of 259 miles from Lasham. On this day also the new Slingsby Darts found conditions to their liking, and former champion John Williamson flying for the R.A.F. team covered 251 miles, only eight less than Brennig James's best flight of the day.

A summary of the final results and principal prize winners follows:

League I

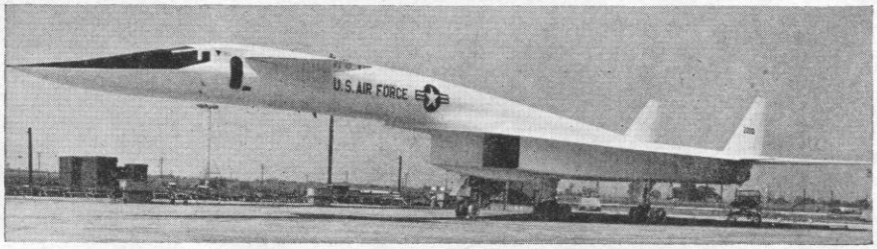
1. J. S. Fielden (Skylark 3), National Open Champion 1964.
2. F/Lt. R. A. Dunn, R.A.F. (Skylark 4), Runner-up.
3. S/Ldr. J. D. Spottiswood, R.A.F. (Olympia 419).
4. D. D. Carrow (Skylark 3).
5. F/Sgt. A. W. Gough, R.A.F. (Olympia 419).
6. F/O. D. S. Innes, R.A.F. (Ka-6), Standard Class Champion 1964.
7. Dr. Brennig James (Skylark 3).
8. F/Lt. I. W. Strachan, R.A.F. (Skylark 4).
9. Sgt. P. E. Dawson, R.A.F. (Skylark 4).
10. A. H. Warminger (Olympia 419).

Runner-up in the Standard Class Championship was F/O. J. S. Williamson, R.A.F., who was placed 17th in the open classification; he was flying a Dart. Third in the Standard Class and 20th in the open was Mrs. Anne Burns flying a Ka-6.

League II

1. A. W. Doughty, Metropolitan Police, (Skylark 3), League II Champion 1964.
2. D. P. L. Scallon (Skylark 4), Runner-up.
3. E. Jerzycki (Skylark 4), Polish Air Force Gliding Association.

The Inter-Service Team prize was won handsomely by the Royal Air Force, who gained no less than six out of the first ten places in League I.



N.A. XB-70A Valkyrie Emerges

ROLLED OUT AT Palmdale, California, on 11th May and scheduled to fly next month, the North American XB-70A Valkyrie was originally intended as a supersonic replacement for the Boeing B-52 Stratofortress. Unlike earlier supersonic bombers which cruise below Mach 1 for most of their flight and accelerate for a supersonic "dash" over the target area, the Valkyrie was required to carry out *the whole* of its mission at Mach 3 (2,000 m.p.h.)—an out-and-back distance of up to 7,600 miles unrefuelled and at altitudes exceeding 70,000 ft.

However, American views on bombers have since changed and the two Valkyries now ordered will be used for research into all the factors involved in sustained high-speed flight. Results will be directly applicable to the proposed U.S. supersonic transport and other companies competing for the S.S.T. contract will have access to North American's findings.

Dimensions of the Valkyrie are 105 ft. span, 185 ft. length and 30 ft. height; all-up weight is believed to be well over 500,000 lb. Construction is largely of brazed stainless-steel honeycomb sandwich, but extensive use is also made of titanium and other heat-resistant metals. The aircraft is powered by six General Electric YJ-93 turbojets, each developing over 30,000-lb. thrust, fed with air through an 80 ft. long duct with a special inlet control system which, at supersonic speeds, slows down the air by a series of shocks and adjusts its pressure so that the engines will function efficiently.

At high speeds the Valkyrie also makes use of "compression lift", riding on top of its shock wave and deriving about 30 per cent extra lift. The velocity of the air ahead of the shock wave is Mach 3 but drops to about Mach 2.3 behind; this results in a pressure rise which, by suitable aerodynamic design, is applied as lift to the undersurfaces of the aircraft.

Features of the XB-70A are its canard foreplane and wingtips which are drooped about 60 deg. at high speeds to increase directional stability