

MCDONNELL
MODEL
188E

AN AMERICANIZED* BREGUET 941



***AMERICAN MILITARY STANDARDS**

MCDONNELL



Breguet 941—prototype of the McDonnell Model 188E

The Breguet 941 is the only truly satisfactory STOL transport flying today by virtue of its outstanding controllability and safety at the low airspeeds associated with very short take-off and landing distances. Prompted by appreciation of this outstanding accomplishment and by a recognition of the need by the U. S. Military for a truly safe STOL transport, McDonnell executed a license agreement with Soci  t   Breguet in 1962. This permits the use of the flight-proven Breguet 941 design in an American produced STOL transport, the Mc-

Donnell 188E. Built to U. S. Military Standards, the McDonnell 188E will take full advantage of the more than nine years of research and development effort already invested in the basic design, as well as the flight experience gained since June 1961. Flight experience on an earlier prototype, the 940, dates from May 1958.

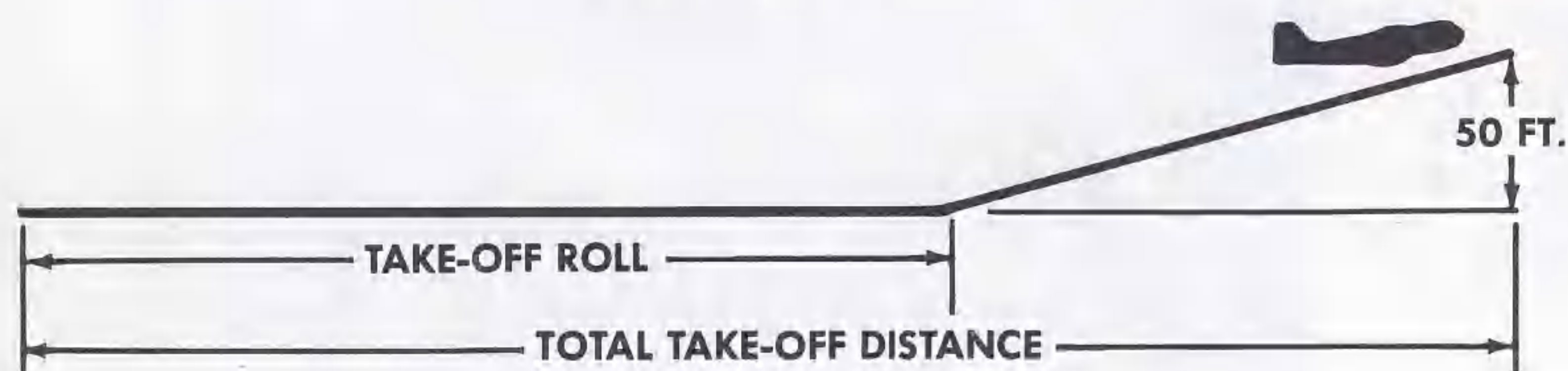
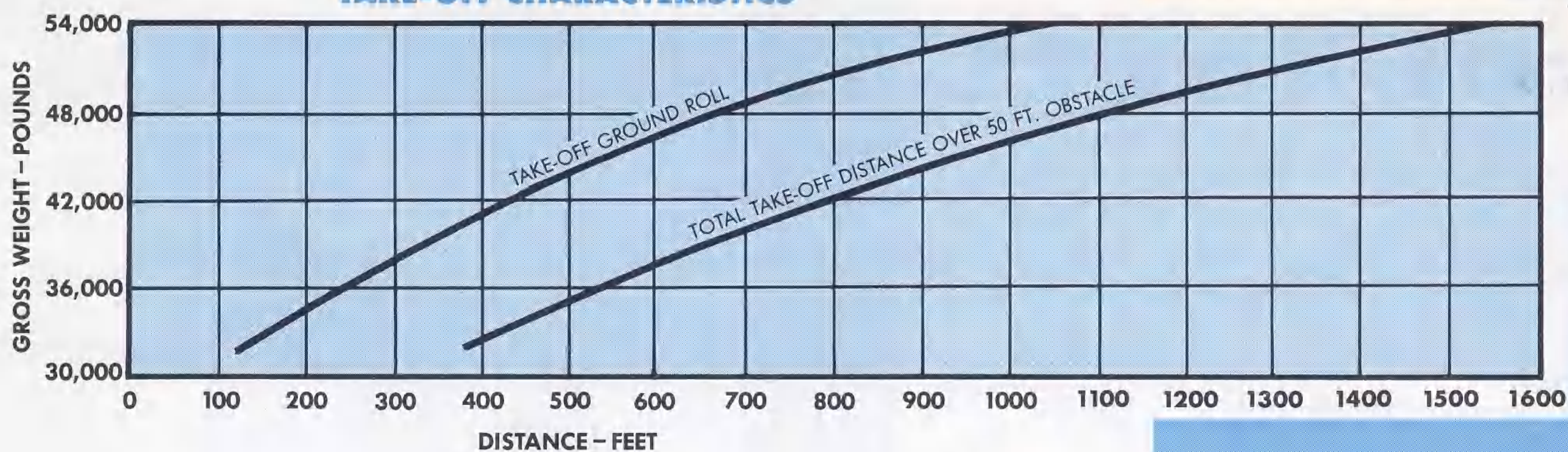
Unlike the 941 as it is flying today, the McDonnell 188E will be equipped with flight operable rear cargo doors. A mock-up of these doors has been built.

The high lift needed for slow speed flight has been achieved by deflecting the propeller slipstreams with full-span, triple-slotted, highly deflected (up to 100  ) flaps, and by immersing almost the entire wing span in the propeller slipstream. The highly deflected flaps also provide the high drag required to achieve steep approach angles (8  -9  ) to assure short landings when approaching over obstacles. The glide slope and landing touchdown point can be accurately controlled with the throttle, because the immersion of the wing in the slipstream makes approximately 40% of the wing lift generated on the landing approach directly responsive to the engine power setting.

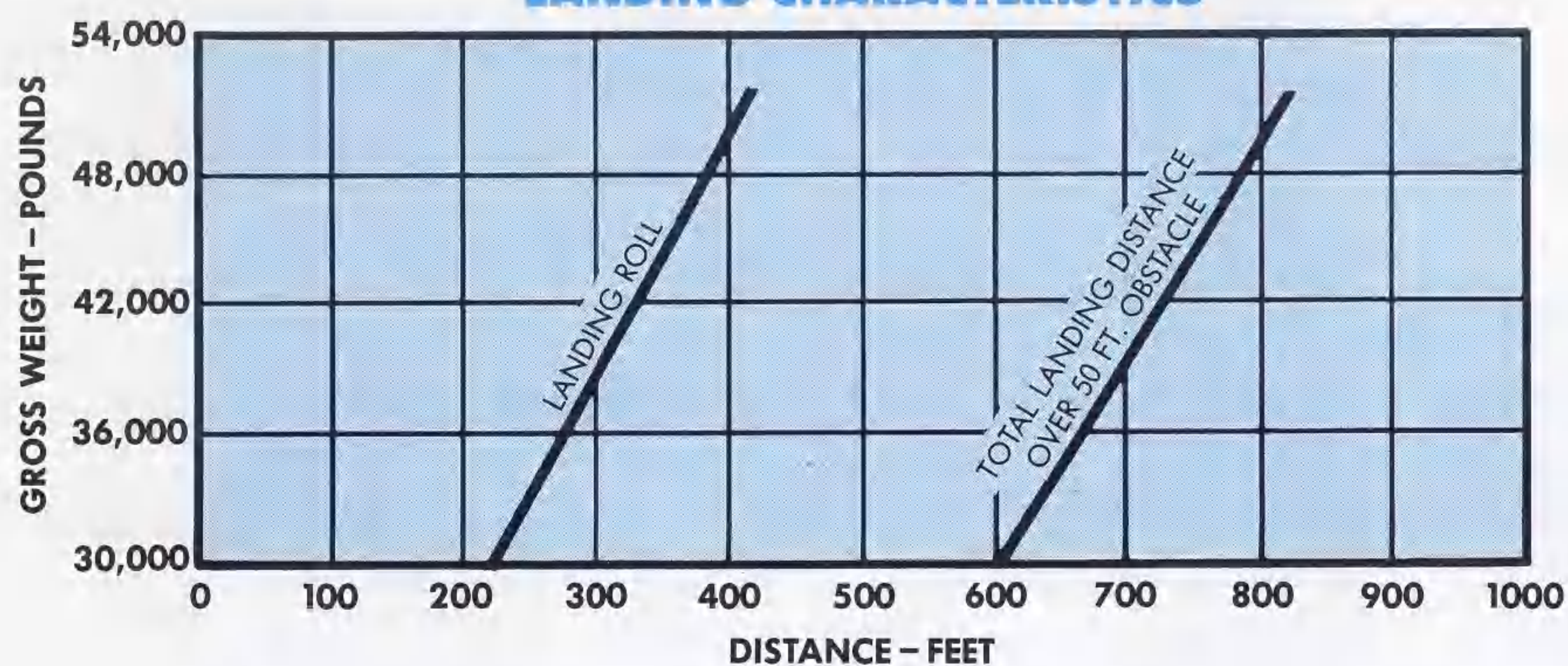
The design of the "trailing arm" landing gear, which provides for wheel movement in both fore-and-aft and vertical directions, is ideally suited to rough terrain operations.



TAKE-OFF CHARACTERISTICS



LANDING CHARACTERISTICS



The outstanding take-off characteristics of the McDonnell 188E result, in part, from the use of large diameter (14.75'), high static thrust propellers. The unusually short landing distances are possible because of its steep approach capability, slow approach speeds, and ability to apply full reverse propeller pitch within one second after touchdown. The take-off characteristics illustrated are based on airspeeds greater than minimum control speeds. The slow speed maneuverability of the 188E permits the pilot to take evasive action immediately after take-off to avoid obstacles in the normal flight path.

The high level of safety provided in the 188E for STOL operations results primarily from the interconnection of the four propulsion units by a small-diameter, flexible cross-shaft. Should an engine fail, the remaining engines would continue to power the four propellers, thus eliminating a possible critical yaw condition during maximum performance STOL operations. Because of the cross-shafting, only 17% of propeller thrust is lost in the event of an engine failure during take-off, even though the installed power is reduced by 25%.

The ability to transfer power from one side of the aircraft to the other, via the cross-shafting, permits the use of differential pitch between the extreme out-board propellers to provide exceptional low speed lateral control.

Easy access to the spar-mounted cross-shafting is provided by the hinged wing leading edge.



Access to small diameter, flexible inter-engine cross-shafting.

MCDONNELL MODEL 188E

Maximum Payload 8¾ TONS

Payload for 500 na. mi. Radius Missions 8 TONS

Troop Capacity 55

Landing and Take-off Distance
over 50 ft. Obstacle at Midpoint of Radius
(100% Payload Outbound,
50% Return) LESS THAN 1000 FT.

Cruise Speed 200 KTS.

Cabin Dimensions

Length to Tail Ramp Hinge 36.7 FT.

Width (Minimum) 8.5 FT.

Height (Minimum) 7.4 FT.

CBR Rating (California Bearing Ratio)
at Maximum Landing Weight of 51,600 Lbs. 3.5

Minimum Para-Drop Speed 75 KTS.

Ferry Range 3000 + NA. MI.

Power (Four Engines) 1500 H. P. EACH



FEATURES

- **DEFLECTED SLIPSTREAM –
WING WHOLLY IMMERSSED IN PROPELLER SLIPSTREAM.**
- **OUTSTANDING LATERAL CONTROL AT LOW AIRSPEEDS.**
- **EXCEPTIONAL SHORT FIELD PERFORMANCE.**
- **FLIGHT OPERABLE REAR CARGO DOOR.**
- **SMALL OVERALL SIZE – WING SPAN 76.7 FT.**
- **SIMPLIFIED COCKPIT – A SINGLE POWER LEVER FOR THE FOUR ENGINES.**
- **UNPREPARED FIELD CAPABILITY
COMPARABLE TO FULLY LOADED 2½ TON TRUCK.**
- **CROSS SHAFTING BETWEEN PROPULSION UNITS FOR ADDED SAFETY.**
- **ONLY EIGHT PER CENT INCREASE IN TAKE-OFF DISTANCE IN EVENT OF
ONE ENGINE FAILURE.**