= Interstate TDR =

The Interstate TDR was an early unmanned combat aerial vehicle ? referred to at the time as an " assault drone " ? developed by the Interstate Aircraft and Engineering Corporation during the Second World War for use by the United States Navy . Capable of being armed with bombs or torpedoes , 2000 aircraft were ordered , but only around 200 were built . The type saw some service in the Pacific Theater against the Japanese , but continuing developmental issues affecting the aircraft , along with the success of operations using more conventional weapons , led to the decision being made to cancel the assault drone program in October 1944 .

= = Design and development = =

In 1936 , Lieutenant Commander Delmar S. Fahrney proposed that unpiloted , remotely controlled aircraft had potential for use by the United States Navy in combat operations . Due to the limitations of the technology of the time , development of the " assault drone " project was given a low priority , but by the early 1940s the development of the radar altimeter and television made the project more feasible , and following trials using converted manned aircraft , the first operational test of a drone against a naval target was conducted in April 1942 . That same month , following trials of the Naval Aircraft Factory TDN assault drone , Interstate Aircraft received a contract from the Navy for two prototype and 100 production aircraft to a simplified and improved design , to be designated TDR @-@ 1 .

Control of the TDR @-@ 1 would be conducted from either a control aircraft , usually a Grumman TBF Avenger , with the operator viewing a tv screen showing the view from a camera mounted aboard the drone along with the radar altimeter 's readout , or via a pilot on board the TDR @-@ 1 for test flights . Powered by two Lycoming O @-@ 435 engines of 220 horsepower (160 kW) each , the TDR @-@ 1 used a remarkably simple design , with a steel @-@ tube frame constructed by the Schwinn bicycle company covered with a molded wood skin , thus making little use of strategic materials so as not to impede production of higher priority aircraft . Capable of being optionally piloted for test flights , an aerodynamic fairing was used to cover the cockpit area during operational missions . The TDR @-@ 1 was equipped with a fixed tricycle landing gear , that on operations would be jettisoned following takeoff for improved performance .

= = Operational history = =

Under the code @-@ name Operation Option , the Navy projected that up to 18 squadrons of assault drones would be formed , with 162 Grumman TBF Avenger control aircraft and 1000 assault drones being ordered . However technical difficulties in the development of the TDR @-@ 1 , combined with a continued low priority given to the project , saw the contract modified with the order reduced to only around 300 aircraft . A single TDR @-@ 1 was tested by the U.S. Army Air Forces as the XBQ @-@ 4 , however no production contract resulted from this testing .

In 1944 , under the control of the Special Air Task Force (SATFOR) , the TDR @-@ 1 was deployed operationally to the South Pacific for operations against the Japanese . TDR @-@ 1 aircraft equipped a single mixed squadron (Special Air Task Group 1) along with TBM Avenger control aircraft , and the first operational mission took place on September 27 , conducting bombing operations against Japanese ships . Despite this success , the assault drone program had already been canceled after the production of 189 TDR @-@ 1 aircraft , due to a combination of continued technical problems , the aircraft failing to live up to expectations , and the fact that more conventional weaponry was proving adequate for the defeat of Japan . The final mission was flown on October 27 , with 50 drones having been expended on operations , 31 aircraft successfully striking their targets , without loss to the pilots of STAG @-@ 1 .

Following the war , some TDR @-@ 1s were converted for operation as private sportsplanes .

= = Aircraft on display = =

A single example of the TDR @-@ 1 survives , and is on display at the U.S. Navy 's National Museum of Naval Aviation in Pensacola , Florida .

= = Variants and operators = =

United States Navy
XTDR @-@ 1 - Two prototypes .
TDR @-@ 1 - Production version of XTDR @-@ 1 , 189 aircraft produced .
XTD2R @-@ 1 - Variant with two Franklin O @-@ 805 @-@ 2 engines , two prototypes ordered , canceled in favor of TD3R .
XTD3R @-@ 1 - Variant with Wright R @-@ 975 radial engines , three prototypes .
XTD3R @-@ 2 - Variant of XTD3R @-@ 1 , one prototype .
TD3R @-@ 1 - Production version of XTD3R @-@ 1 , 40 aircraft ordered but cancelled .
United States Army Air Forces
XBQ @-@ 4 - Army designation for TDR @-@ 1 . One aircraft converted from TDR @-@ 1 .
XBQ @-@ 5 - Army designation for XTD2R @-@ 1 . Designation reserved but no aircraft ordered .
XBQ @-@ 6 - Army designation for XTD3R . No aircraft produced .
BQ @-@ 6A - Army designation for TD3R @-@ 1 . No aircraft produced .

= = Specifications (TDR @-@ 1) = =

Data from Parsch
General characteristics
Crew : 0 @-@ 1 (optional pilot)
Wingspan : 48 ft (15 m)
Gross weight : 5 @,@ 900 lb (2 @,@ 676 kg)
Powerplant : 2 × Lycoming O @-@ 435 @-@ 2 opposed piston engines , 220 hp (160 kW) each
Performance
Cruise speed : 140 mph (122 kn ; 225 km / h)
Range : 425 mi (369 nmi ; 684 km)
Armament
One 2 @,@ 000 @-@ pound (910 kg) bomb or one aerial torpedo