AERONAUTICS

"Push-Button" Flying

First fully automatic flight control device is being tested by Air Technical Service Command. Has been installed on C-54 "Skymaster."

➤ THE FIRST FULLY automatic flight control device is now being tested by the Air Technical Service Command's All-Weather Flying Center, Columbus, Ohio.

"Push-button" flying is promised by the new instrument which will take off, fly and land an airplane by merely pushing buttons before the take-off to direct its flight. The flight controller, used in conjunction with the A-12 automatic pilot, has been installed in a giant Douglas C-54 "Skymaster" transport for first tests in actual operation.

The new development isn't a radio-controlled plane, but actually an automatic one which permits pre-selection of the course and destination. When the buttons are pushed, according to the ATSC flying experts, the plane will take off, fly a predetermined course to the place indicated by the original button pushed, and land itself automatically.

Designed to permit flights in all weather conditions, the new flight controller is declared to be "the most significant development in flight engineering" by ATSC officials.

Nerve center of the automatic flight controller is the master sequence selector, a huge automatic calculating machine that registers such variable factors as direction, distance and altitude and adjusts the flight of the ship to keep it on its course.

Placed on a runway, the plane using the flight controller can be sent on its way by a button push from the flight dispatcher, it is claimed. The plane's throttle moves up automatically to initiate the take-off. The brakes are unlocked after eight seconds and the plane is on its way.

At 800 feet, the pressure-stat operates to move back the throttle, the wheels are retracted and the aircraft climbs to its cruise altitude. The throttle is moved to cruising speed by the pressure-stat, the magnetic heading control adjusts the plane's course, and the air log records the distance covered in air miles.

As the plane reaches its destination, the air log signals approach to the airport. In landing, ATSC says, the automatically controlled plane comes down to the selected radio compass station. It passes over a cone-of-silence marker that cuts the throttle, while the automatic pilot is being controlled by a compass locator station at the port's outer marker. A down signal fed into the elevator control causes the plane to lose altitude and come in to land in an inbound position. Then the take-off process begins to work in reverse as the plane comes down to 880 feet, report the ATSC engineers.

According to the ATSC flight experts at Wright Field who designed the automatic flight controller, the device is too bulky in its present stage of development to be used for anything but military or experimental purposes. They expect research and invention to make it more compact in time, but they will hazard no guess as to how long will be required to make the flight controller practical for commercial or private flying. Actual performance data on the automatic flight controller are still "classified material" and not available to the public, says the Army.

Emphasizing that the new development is not designed to cut down on the number of flight personnel, the ATSC says no tests have been conducted without pilots and engineers aboard the plane. The inventors of the automatic flight controller say no such tests are contemplated. They envision pilots monitoring the flight controller with engineers checking its performance. For military operations, they add, gunners will still be necessary in combat.

As the first completely automatic flying system, the "push-button" instrument does, however, promise future pilotless airlines for peace and war.

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CONTROLS FLIGHT—Push buttons on the Automatic Flight Controller installed in a giant C-54 "Skymaster" cargo plane are explained by Maj. Paul R. Biggers, project engineer on the development of fully automatic flight.

CHEMISTRY-ENTOMOLOGY

DDT-Plus-Rotenone Spray Rids Cattle of Ticks

➤ DDT ALLIED with rotenone, one of the older insecticides, have formed a team that promises to defeat fever-bearing cattle ticks in the tropics. Applied as a fine, mist-like spray, the double-dose killer has cleaned up from 85% to 90% of the ticks on heavily infested animals over a period of a week. Both chemicals