

A New Teletype Clutch Device

~~(CONFIDENTIAL)~~

A THROW OUT CLUTCH FOR THE TRANSMITTER DISTRIBUTOR

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During the summer months when the temperature outside was between 90° and 95° , the temperature in the teletype communications room in Okinawa was always 10° to 20° (degrees) higher because of the lack of a ventilating system. Most of this heat was being generated from the electrical equipment within the room. The motors on the different equipment became so hot that after a few hours of running it was impossible to place one's bare hand on a motor-housing without burning oneself. It was especially hot in the Transmitter Distributor. Because of the tightly-closed cover very little heat escaped from inside the cover and the entire machine became very hot.

The friction clutch on the main shaft requires a correct amount of spring pressure for proper operation. If the pressure is too little the shaft will not start at a fast enough speed though the motor is running at the correct number of revolutions per minute. If the motor is adjusted to the correct speed while the TD is idle, and the clutch pressure is too much, the motor will gain momentum upon operation of the TD.

After a clutch had been cleaned, lubricated and adjusted there would be very little friction between the driven gear and the pressure plate since the washers were clean and well oiled. However, the intense heat caused mostly by the motor, would thin the oil in the felt washers and the centrifugal force would throw out most of the oil. When the washers became dry there would be more friction between the pressure plates and gear, causing more of a load on the motor and slowing the speed of the motor. This condition necessitated more adjusting of the clutch pressure and motor speed than the preventative maintenance charts specified.

My idea was to eliminate the clutch pressure adjustment. The only way I could see to do this was to substitute the friction clutch with a throw-out clutch.

I disclosed my idea to Cpl. Normand E. Cloutier and asked him if he wanted to help me design a main shaft employing a throw-out instead of a regular friction clutch. He agreed and we began.

