Capt McRainey

FLIGHT OPERATIONS CIRCULAR

THIS CIRCULAR IS CANCELLED EFFECTIVE (DATE): 1 September 1967

REF. NO. OP-C-67-013
DATE: 7 July 1967

SUBJECT:

Volpar Negative Torque System (NTS)

Recently an accident occurred where a failure of the NTS appears to be a major contributing factor. We believe it necessary that all Volpar pilots review the NTS operation. The following points should also be understood.

1. NTS Ground Check:

The NTS ground check is an almost positive check that the NTS system is operating. The differences between NTS operation in the air and on the ground are: In the air the actuating negative torque is supplied by the propeller and during the ground check it is supplied by the starter; In the air, pressure oil is supplied to the NTS regulator from the prop governor and during the ground check pressure oil is supplied by the unfeathering pump. Preliminary Technical Service's finding indicate that the recent NTS failure was due to the fact that the prop governor would not supply oil to the NTS regulator due to an incorrect prop governor being installed. The only way the pilot could gave obtained NTS was to actuate the unfeathering pump continuously.

2. Power Lever Position:

In the recent accident the engine was shut down with the "Stop" switch. The fuel shut off but the NTS did not operate. The feather lever was pulled but the engine would not feather. In order to minimize drag in this situation the power lever should be placed in the full forward position. If the power lever is placed in "Flight Idle" the blades will go to the low pitch stop of about $11\frac{1}{2}^{\circ}$. If the power lever is in the full forward position, the blades can only go to a low pitch stop of about 22°. The difference of 10° of blade angle will make a considerable difference in drag.

3. Flying With Suspected NTS Problems:

The Volpar is not considered airworthy with the NTS inoperative. Should the pilot suspect an NTS problem and find it necessary to shut down the engine the feather lever should always be used, not the "Stop" switch. After an engine change or work on the engine

- P.T.O.-

torque system, it is necessary to check the negative torque functionally while airborne. Prior to these flights the pilot must get both a satisfactory ground NTS check and feather check. When checking the NTS while airborne the pilot should realize that if the NTS is inoperative the engine drag is a function of the square of the true airspeed. e.g. if 500 pounds of drag result from the windmilling engine at 100 KTS TAS than 2000 pounds of drag will result at 200 KTS TAS. In the latter case the initial drag buildup would almost certainly put the aircraft out of control.

Distribution: MFD)
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All Volpar Pilots
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File

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