

Restricted

Air Force Head-Quarters

NENE INSTRUCTION NO. 1
(Issue 3)

Technical Order

Application: Nene 2 VH Aus.
installed in Vampire
aircraft

STARTING AND OPERATING INSTRUCTIONS

Introduction

1. The life of a turbo-jet or turbo-prop engine depends to a large extent on the temperature to which it is subjected and the number of times it is heated up and cooled down. In view of this, ground running, accelerations and idling and re-lighting in the air must be kept to an absolute minimum.

Jet pipe temperatures are critical and care must be exercised to ensure that the limits laid down are not exceeded.

As the fuel pumps are lubricated by the fuel, the low pressure (L.P.) fuel cock must be in the "ON" position before the engine is turned.

Before starting and during ground running see that the Safety Precautions laid down in Aircraft Engineering Instructions, General, Part 21, Section 1, Instruction No. 12 are observed.

2. Operational Limitations - 5,000 lb. Static Thrust

Condition	R.P.M. (Max.)	J.P.T. (Max.)	Oil Press. (Min.)	Oil Temp. Inlet (Max.)	Remarks
Take-off	12,300	745°C	20 lb.	80°C	10 minute limit
Combat	12,300	745°C	20 lb.	80°C	10 minute limit
Climb	12,000	705°C	20 lb.	80°C	30 minute limit
Cruise	11,600	650°C	20 lb.	80°C	
Idling sea level	2500 ²⁶⁵⁰ + 200 (M.A.)	550°C	3 lb.	80°C	Minimum oil temperature for opening up - 40°C
20,000 to 30,000 feet	4,000				
30,000 feet and above	6,000				

Starting

3. (a) Ground Starting Equipment - Plug into aircraft circuit.

Note: Engine cannot be started from aircraft batteries.
Starting equipment of 24 volts and minimum of
230 amps. is required.

-2- NENE INSTRUCTION NO. 1
(Issue 3)

- (b) Ground/flight switch - Set to flight
- (c) Low pressure (L.P.) and high pressure (H.P.) cocks - ON
- (d) Throttle lever - Fully closed.
- (e) Interlocked S.C. safety switch - ON
- (f) Boost coil isolating switch - ON
- (g) When fuel pressure warning light goes out - Press starter button for 2 seconds.

After about 5 seconds the engine R.P.M. will increase and light-up should occur. Engine will then accelerate to idling R.P.M. (2500 $\pm$ 200) without movement of throttle.

2650

(A. 12) Caution: Do not attempt to open throttle until engine is running at idling R.P.M.

Action Immediately after Starting

- 4. (a) Oil pressure - Check minimum 3 lb./sq.in.
- (b) Temperature - The jet pipe temperature may momentarily rise above the idling limit (550°C) but should soon settle down to this figure. If temperature exceeds 600°C close high pressure cock and stop engine.

Failure to Start. - If engine fails to start - close high pressure cock. Do not attempt a further start until engine has stopped rotating and until fuel has ceased to drain from engine drain pipe.

Ground Running

- 5. (a) Open up to 7,500 R.P.M. - Check that generator warning light goes out.
- (b) Open up to 8,000 R.P.M. - Turn on fuel pump emergency switch (warning light ON).
 - Check that there is a rise in R.P.M.
 - Turn OFF fuel pump emergency switch and ensure that warning light goes out.
- (c) Open up to 11,600 R.P.M. - Check that oil pressure is not less than 20 lb./sq.in.
- (d) Open up to full throttle - Check that governed R.P.M. is 12,300.
 - Check that jet pipe temperature does not exceed 745°C. (Normal 720°).

-3- NENE INSTRUCTION NO. 1
(Issue 3)

- (e) Turn on fuel pump emergency switch (warning light ON)
 - The normal desired reaction on governed R.P.M. is nil change, but a tolerance of ± 50 is acceptable.
 - 100
 - Turn OFF fuel pump emergency switch and ensure that warning light goes out.
- (f) Close throttle slowly and smoothly to idling R.P.M.
- (g) Carry out one acceleration check of not less than 10 seconds from idling to take-off R.P.M. During this acceleration the jet pipe temperature may momentarily exceed the maximum, but it should drop to normal when the R.P.M. has stabilized.
- (h) Close throttle to 7,500 R.P.M. and maintain at this speed for approximately 1 minute.
- (i) Close throttle to idling R.P.M.

Stopping Engine

- 6. (a) Throttle - Close
- (b) High pressure cock - OFF
- (c) Interlocked S.C. safety switch - OFF
- (d) Boost coil isolating switch - OFF
- (e) Low pressure cock - Leave in ON position unless maintenance work is to be carried out on fuel system.
- (f) Ground/flight switch - Set to ground.

7. Nene Instruction No. 1 (Issue 2), dated 25th May, 1951, having been superseded by this Instruction, is hereby cancelled.

Reference: File R.A.A.F. 150/4/7797.

Date of Issue: 12th October, 1951.



This file was downloaded
from the RTFM Library.

Link: www.scottbouch.com/rtfm

Please see site for usage terms,
and more aircraft documents.