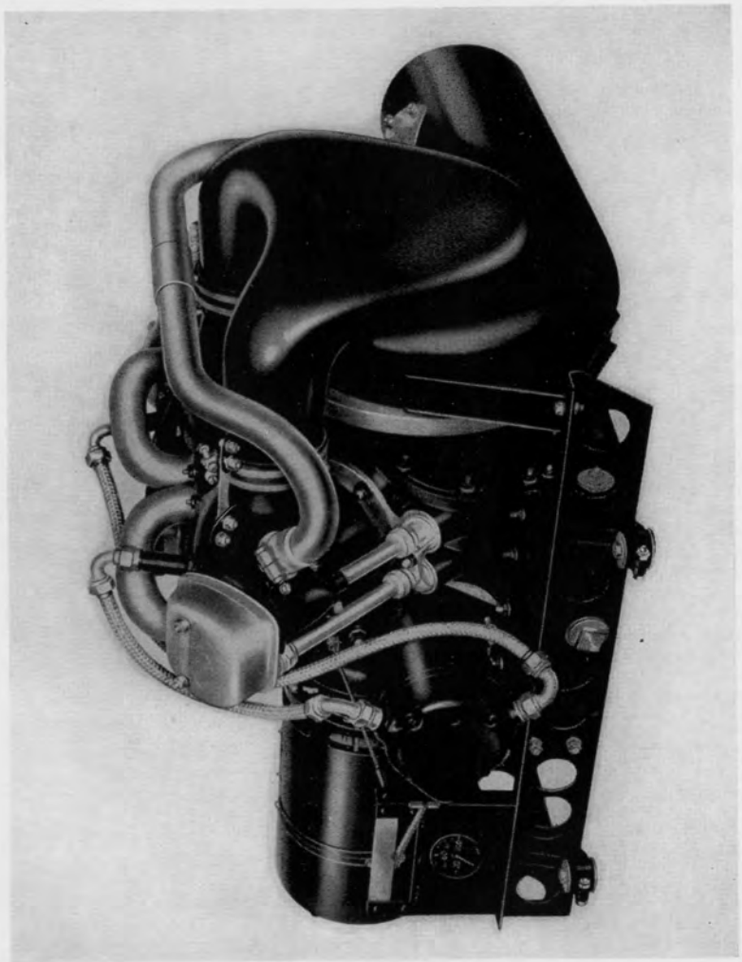


Andover Auxiliary V-32

Andover Auxiliary Unit, Series V-32

Model .....V-32.

Type .....2 cylinders, vee 90 degrees, air cooled, geared drive, not supercharged, 4-cycle.

Construction .....1-piece aluminum alloy crankcase. Cylinders with steel barrels and aluminum alloy heads. 1 inlet valve and 1 exhaust valve per cylinder actuated by push rods. 1-throw 1-piece counterbalanced crankshaft supported in 2 plain bearings. Spur step-up gear, ratio 1.95: 1.

Supercharger .....None.

Carburation .....1 Andover KB10000 updraft carburetor with manual altitude control.

Ignition .....1 Wico Rem 1574 magneto. 1 spark plug per cylinder. Shielded wiring.

Lubrication .....Pressure feed, 60 lb./sq.in. (4,2 kg/cm²).

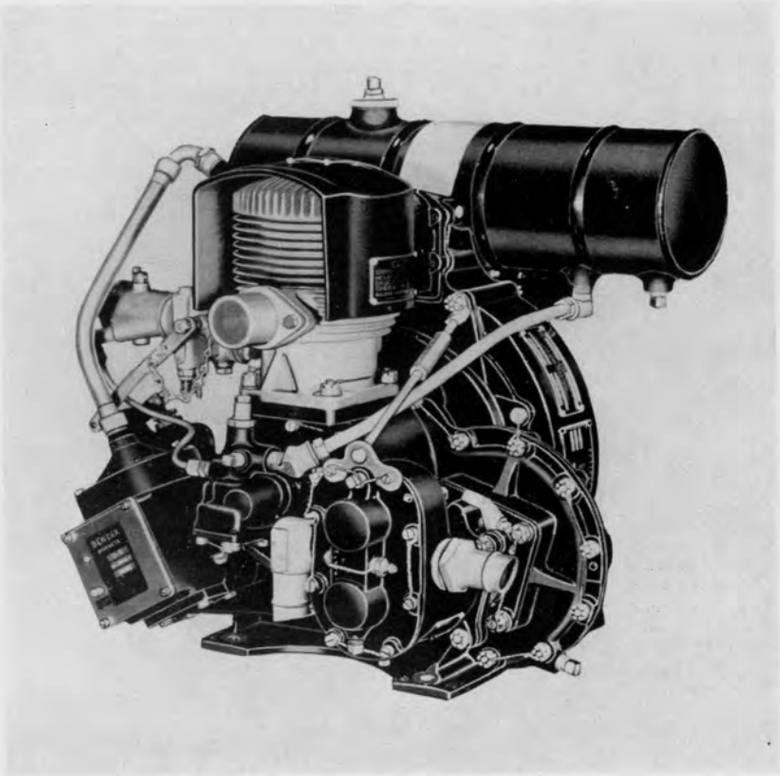
Starter .....Hand starter or motorizing generator.

Bore	2.75 in.	70 mm
Stroke	2.686 in.	68 mm
Displacement	32 cu.in.	0,52 l
Compression ratio	7.8:1	7,8:1
Width	20.5 in.	0,520 m
Height	16.5 in.	0,418 m
Length	30.0 in.	0,762 m
Weight of unit (net)	121 lb.	55 kg
Weight/kw. output (cont.)	24 lb.	11 kg
Fuel consumption (cont.)	1.4 lb./kw./hr.	0,63 kg/kw/hr
Oil consumption (cont.)	0.03 lb./kw./hr.	14 g/kw/hr
Gasoline rating	100 octane	100 octane
Oil grade (viscosity)	65 S.U. secs.	11,7 cs
Output/displacement	0.47 h.p./cu.in.	28,8 hp/l
Output/piston area	1.26 h.p./sq.in.	0,20 hp/cm²
Piston speed (max.)	1,432 ft./min.	7,2 m/sec
B.m.e.p. (max.)	118 lb./sq.in.	8,3 kg/cm²

Output (maximum) .....15 h.p./3,200 r.p.m./sea level
Output (continuous) ....10 h.p./3,200 r.p.m./sea level

Output (overload) .....7.5 kw. @ 28.5 v. D.C./sea level
Output (continuous) ....5.0 kw. @ 28.5 v. D.C./sea level

The engine is coupled through a geared step-up drive to an AAF P-2 aircraft type D.C. electric generator. The unit is mounted horizontally. Cooling is by means of a fan and ducts with baffles around the cylinders. An automatic voltage regulator controls the electric power generated to suit the 24-volt system on the airplane.



Eclipse Auxiliary NEG-1

Eclipse Auxiliary Unit, Series NEG

Model .....**NEG-1 (Model 3017).**

Type .....1 cylinder, vertical, air cooled, direct drive, not supercharged, 2-cycle.

Construction .....1-piece aluminum alloy crankcase with cover plate. Cylinder of cast aluminum with integral head. Steel cylinder liner. Crankcase compression with transfer passage and port in cylinder wall. Piston with deflector on head. 1-throw 1-piece counterbalanced crankshaft supported in 2 ball bearings.

Supercharger .....None.

Carburation .....1 Tillotson straight tube carburetor.

Ignition .....1 Bendix-Scintilla S-1 magneto. 1 spark plug. Shielded wiring.

Lubrication .....Lubricating oil mixed with the gasoline, ratio 1: 10.

Starter .....Pull rope.

Bore	2.50 in.	63 mm
Stroke	2.25 in.	57 mm
Displacement	12 cu.in.	0,20 l
Compression ratio	6.0:1	6,0:1
Width	16.1 in.	0,408 m
Height	20.5 in.	0,509 m
Length	15.9 in.	0,404 m
Weight of unit (net)	63 lb.	29 kg
Weight/kw. output (cont.)	21 lb.	9,5 kg
Fuel consumption (cont.)	1.7 lb./kw./hr.	0,77 kg/kw/hr
Oil consumption (cont.)	0.13 lb./kw./hr.	59 g/kw/hr
Gasoline rating	87 octane	87 octane
Oil grade (viscosity)	40-100 S.U. secs.	4,3 - 20.5 cs
Output/displacement	0.35 h.p./cu.in.	21,2 hp/l
Output/piston area	0.82 h.p./sq.in.	0,13 hp/cm²
Piston speed (max.)	1,500 ft./min.	7,6 m/sec
B.m.e.p. (max.)	69 lb./sq.in.	4,8 kg/cm²

Output (maximum .....4.25 h.p./4,000 r.p.m./sea level
Output (continuous) ....4.0 h.p./4,000 r.p.m./sea level

Output (overload) .....None
Output (continuous) ....3 kw. @ 28.5 v. D.C. or 3 kw. @ 120 v. A.C./sea level

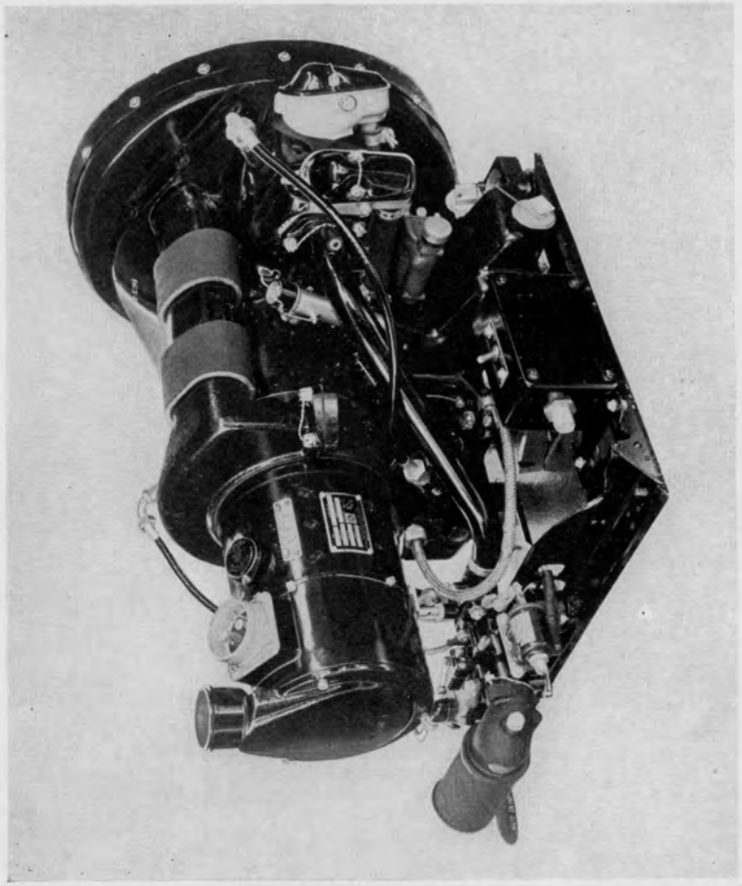
The engine is direct coupled to an Eclipse 638-1 D.C.-A.C. electric generator. The unit is mounted horizontally. Cooling is by means of an integral blower fan. The remote control system is automatic and the engine speed is regulated by a centrifugal governor. Automatic voltage regulators control the electric power generated to suit both 24-volt and 120-volt systems on the airplane. An additional power take-off geared at 0.345 times engine speed is provided.

NEG-1A (Model 3359): Same as NEG-1 (Model 3017). The gasoline is obtained from the main airplane supply tanks and is fed to the engine through an auxiliary float chamber while the lubricating oil is fed to the carburetor air horn from a tank mounted on the engine with an integral metering pump.

NEG-1A (Model 3359-1): Same as NEG-1A (Model 3359).

NEG-1A (Type 542 Model 1): Same as NEG-1A (Model 3359-1).

NEG-2 (Type 542 Model 2): Same as NEG-1A (Model 3359-1). The engine of this unit is rated at 4.25 h.p./4,000 r.p.m./sea level.



Lawrance Auxiliary 20A

Lawrance Auxiliary Unit, Series 20

Model .....20A.

Type .....2 cylinders, horizontally opposed, air cooled, direct drive, not supercharged, 4-cycle.

Construction .....2-piece aluminum alloy crankcase divided vertically. Cylinders with steel barrels and aluminum alloy heads. 1 inlet valve and 1 exhaust valve per cylinder actuated by push rods. 2-throw 1-piece counterbalanced crankshaft supported in 2 plain bearings.

Supercharger ..... None.

Carburation .....1 Bendix-Stromberg HL 7/8 carburetor.

Ignition .....1 Wico SF2LW-1 magneto. 1 spark plug per cylinder. Shielded wiring.

Lubrication .....Pressure feed, 60 lb./sq.in. (4,2 kg/cm²).

Starter .....Pull cord.

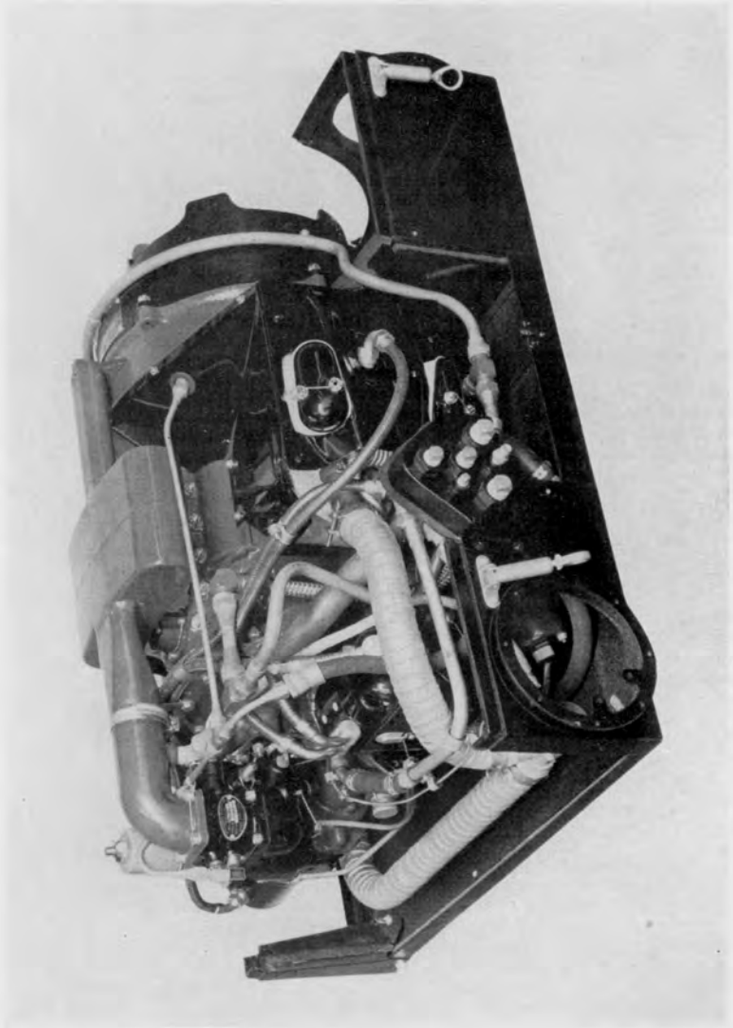
Bore	2.375 in.	60 mm
Stroke	2.25 in.	57 mm
Displacement	20 cu.in.	0,33 l
Compression ratio	8.5:1	8,5:1
Width	21.0 in.	0,533 m
Height	17.0 in.	0,432 m
Length	30.0 in.	0,762 m
Weight of unit (net)	120 lb.	54 kg
Weight/kw. output (cont.)	24.0 lb.	10,9 kg
Fuel consumption (cont.)	1.4 lb./kw./hr.	0,63 kg/kw/hr
Oil consumption (cont.)	0.06 lb./kw./hr.	28 g/kw/hr
Gasoline rating	100 octane	100 octane
Oil grade (viscosity)	65-80 S.U. secs.	11,7 - 15,6 cs
Output/displacement	0.75 h.p./cu.in.	45,4 hp/l
Output/piston area	1.70 h.p./sq.in.	0,27 hp/cm²
Piston speed (max.)	2,250 ft./min.	11,4 m/sec
B.m.e.p. (max.)	99 lb./sq.in.	7,0 kg/cm²

Output (maximum) ....15 h.p./6,000 r.p.m./sea level
Output (continuous) ....10 h.p./6,000 r.p.m./sea level
Output (at altitude).....Not available/10,000 ft. (3 050 m)

Output (overload) .....7.5 kw. @ 28.5 v. D.C./sea level
Output (continuous) ...5.0 kw. @ 28.5 v. D.C./sea level
Output (at altitude).....4.5 kw. @ 28.5 v. D.C./10,000 ft. (3 050 m)

The engine is direct coupled to an aircraft type D.C. electric generator. The unit is mounted horizontally. Cooling is by means of an axial-flow fan mounted on the generator armature. The remote control system is automatic and the engine speed is regulated by a pneumatic governor. An automatic voltage regulator controls the electric power generated to suit the 24-volt system on the airplane.

This auxiliary unit is used on Army heavy bombers.



Lawrance Auxiliary 30C

Lawrance Auxiliary Unit, Series 30C

Model .....30C-1 and 30C-2.

Type .....2 cylinders, horizontally opposed, air cooled, direct drive, not supercharged, 4-cycle.

Construction .....2-piece aluminum alloy crankcase divided horizontally. Cylinders with steel barrels and aluminum alloy heads. 1 inlet valve and 1 exhaust valve per cylinder actuated by push rods. 2-throw 1-piece counterbalanced crankshaft supported in 2 plain bearings.

Supercharger .....None.

Carburation .....1 Bendix-Stromberg NA-HIE carburetor with automatic mixture control.

Ignition .....2 Bendix-Scintilla SF2R-10 magnetos. 2 spark plugs per cylinder. Shielded wiring.

Lubrication .....Pressure feed, 60 lb./sq.in. (4,2 kg/cm²).

Starter .....Hand starter or motorizing generator.

Bore	2.625 in.	67 mm
Stroke	2.75 in.	70 mm
Displacement	30 cu.in.	0,49 l
Compression ratio	9.0: 1	9,0: 1
Width	30.0 in.	0,762 m
Height	16.0 in.	0,406 m
Length	36.0 in.	0,914 m
Weight of unit (net)	213 lb.	97 kg
Weight/kw. output (cont.)	42.6 lb.	19,3 kg
Fuel consumption (cont.)	1.3 lb./kw./hr.	0,59 kg/kw/hr
Oil consumption (cont.)	0.06 lb./kw./hr.	28 g/kw/hr
Gasoline rating	87 or 100 octane	87 or 100 octane
Oil grade (viscosity)	65-80 S.U. secs.	11,7 - 15,6 cs
Output/displacement	0.50 h.p./cu.in.	30,6 hp/l
Output/piston area	1.40 h.p./sq.in.	0,21 hp/cm²
Piston speed (max.)	1.879 ft./min.	9,6 m/sec
B.m.e.p. (max.)	99 lb./sq.in.	7,0 kg/cm²

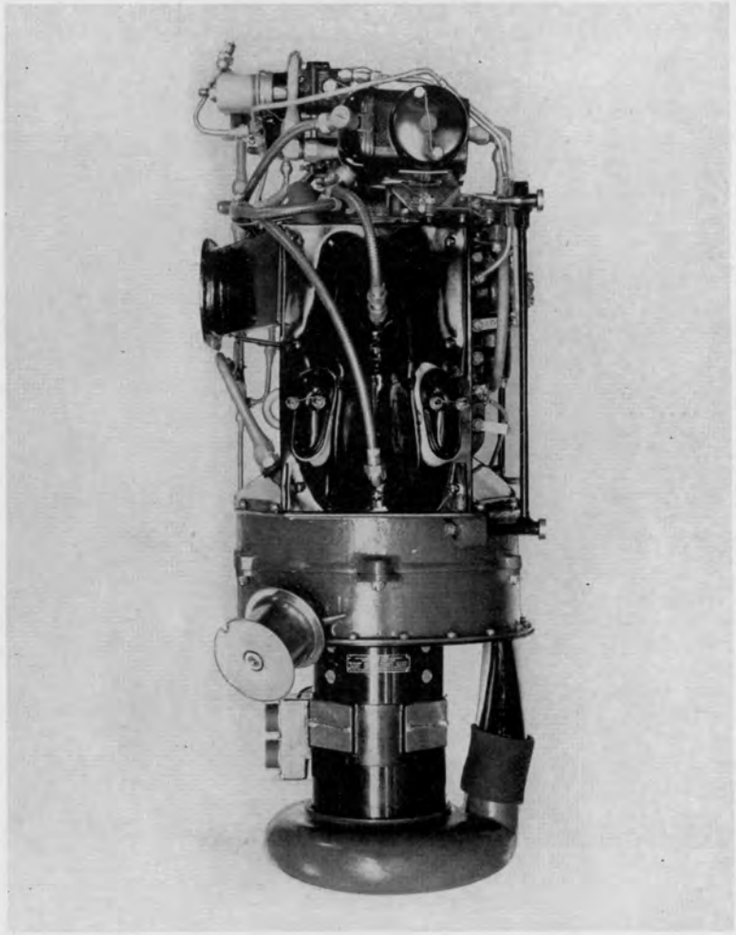
Output (maximum) ....15 h.p./4,000 r.p.m./sea level
Output (continuous) ...10 h.p./4,000 r.p.m./sea level
Output (at altitude).....7.5 h.p./4,000 r.p.m./20,000 ft. (6 100 m)

Output (overload).. ...7.5 kw. @ 30 v. D.C./sea level
Output (continuous) ....5.0 kw. @ 30 v. D.C./sea level
Output (at altitude)....2.85 kw. @ 30 v. D.C./20,000 ft. (6 100 m)

The engine is direct coupled to an aircraft type D.C. electric generator. The unit is mounted horizontally in a soundproof enclosure. Cooling is by means of an axial-flow fan mounted on the generator armature. The remote control system is automatic and the engine is regulated by a mechanical governor. An automatic voltage regulator controls the electric power generated to suit the 24-volt system on the airplane.

30C-4, 30C-5: Same as 30C-1 and 30C-2. For use at altitudes of not more than 10,000 ft. (3 050 m).

These auxiliary units are used on Navy patrol bombers, large transport planes and Navy PT boats.



Lawrance Auxiliary 30D

Lawrance Auxiliary Unit, Series 30D

Model .....30D-1.

Type .....2 cylinders, horizontally opposed, air cooled, direct drive, not supercharged, 4-cycle.

Construction .....2-piece aluminum alloy crankcase divided horizontally. Cylinders with steel barrels and aluminum alloy heads. 1 inlet valve and 1 exhaust valve per cylinder actuated by push rods. 2-throw 1-piece counterbalanced crankshaft supported in 2 plain bearings.

Supercharger .....None.

Carburation .....1 Bendix-Stromberg NA-H1E carburetor with automatic mixture control.

Ignition .....2 Bendix-Scintilla SF2R-10 magnetos. 2 spark plugs per cylinder. Shielded wiring.

Lubrication .....Pressure feed, 60 lb./sq.in. (4,2 kg/cm²).

Starter .....Hand starter.

Bore	2.625 in.	67 mm
Stroke	2.75 in.	70 mm
Displacement	30 cu.in.	4,9 l
Compression ratio	9.0: 1	9,0: 1
Width	26.0 in.	0,660 m
Height	16.0 in.	0,406 m
Length	39.0 in.	0,991 m
Weight of unit (net)	212 lb.	96 kg
Weight/kw. output (cont.)	106 lb.	48 kg
Fuel consumption (cont.)	1.2 lb./kw /hr.	0,54 kg/kw/hr
Oil consumption (cont.)	0.06 lb./kw./hr.	28 g/kw/hr
Gasoline rating	87 or 100 octane	87 or 100 octane
Oil grade (viscosity)	65-80 S.U. secs.	11,7 - 15,6 cs
Output/displacement	0.50 h.p./cu.in.	30,6 hp/l
Output/piston area	1.40 h.p./sq.in.	0,21 hp/cm²
Piston speed (max.)	1,879 ft./min.	9,6 m/sec
B.m.e.p. (max.)	99 lb./sq.in.	7,0 kg/cm²

Output (maximum) ....15 h.p./4,100 r.p.m./sea level
Output (continuous) ...10 h.p./4,000 r.p.m./sea level
Output (at altitude).....7.5 h.p./4,000 r.p.m./20,000 ft. (6 100 m)

Output (overload)..... Not available
Output (continuous) ...2 kw. @ 30 v. D.C., or 1 kw. @ 120 v. A.C./sea level
Output (at altitude)....2 kw. @ 30 v. D.C., or 1 kw. @ 120 v. A.C./20,000 ft. (6 100 m)

The engine is direct coupled to an aircraft type D.C. or A.C. electric generator. The unit is mounted horizontally in a soundproof enclosure. Any generator having a standard 6.0 in. (152 mm) S.A.E. mounting flange can be used. Cooling is by means of a specially designed suction system. The remote control system is automatic and the engine speed is regulated by a mechanical governor. An automatic voltage regulator controls the electric power generated to suit either the 24-volt or the 120-volt system on the airplane.

30D: Similar to 30D-1. Constructed to utilize an Eclipse NEA-3 electric generator only. No soundproof enclosure.

These auxiliary units are used on Navy patrol bombers and blimps.

Lawrance Auxiliary 75B

Lawrance Auxiliary Unit, Series 75

Model .....**75B.**

Type .....5 cylinders, 1-row radial, air cooled, direct drive, not supercharged, 4 cycle.

Construction .....2-piece aluminum alloy crankcase divided horizontally. Cylinders with steel barrels and aluminum alloy heads. 1 inlet valve and 1 exhaust valve per cylinder actuated by push rods. 1-throw 2-piece counterbalanced crankshaft supported in 2 plain bearings.

Supercharger ..... None.

Carburation .....1 Bendix-Stromberg NA-H1E carburetor with automatic mixture control.

Ignition .....2 Bendix-Scintilla SF5RN-12 magnetos. 2 spark plugs per cylinder. Shielded wiring.

Lubrication .....Pressure feed, 60 lb./sq.in. (4,2 kg/cm²).

Starter .....Hand starter or motorizing generator.

Bore	2.625 in.	67 mm
Stroke	2.75 in.	70 mm
Displacement	75 cu.in.	0,12 l
Compression ratio	9.0: 1	9,0: 1
Diameter of enclosure	31.0 in.	0,787 m
Height	39.0 in.	0,990 m
Weight of unit (net)	310 lb.	141 kg
Weight/kw. output (cont.)	38.7 lb.	17,5 kg
Fuel consumption (cont.)	1.6 lb./kw./hr.	0,73 kg/kw/hr
Oil consumption (cont.)	0.06 lb./kw./hr.	28 g/kw/hr
Gasoline rating	91 or 100 octane	91 or 100 octane
Oil grade (viscosity)	65-80 S.U. secs.	11,7 - 15,6 cs
Output/displacement	0.50 h.p./cu.in.	30,6 hp/l
Output/piston area	1.40 h.p./sq.in.	0,21 hp/cm²
Piston speed (max.)	1,856 ft./min.	9,4 m/sec
B.m.e.p. (max.)	102 lb./sq.in.	7,2 kg/cm²

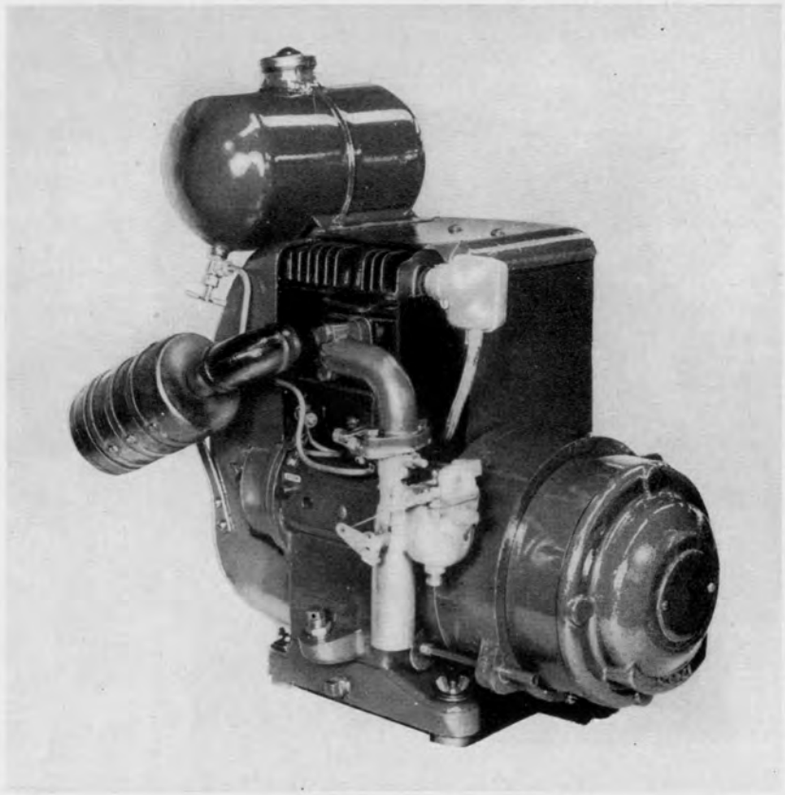
Output (maximum) ....37.5 h.p./4,050 r.p.m./sea level
Output (continuous) ...30 h.p./4,050 r.p.m./sea level
Output (at altitude).....15 h.p./4,050 r.p.m./20,000 ft. (6 100 m)

Output (overload).. ...12 kw. @ 30 v. D.C./sea level
Output (continuous) ....8 kw. @ 30 v. D.C./sea level
Output (at altitude)....8 kw. @ 30 v. D.C./20,000 ft. (6 100 m)

The engine is direct coupled to an aircraft type D.C. electric generator. The unit is mounted vertically in a soundproof enclosure. Cooling is by means of an axial-flow fan mounted on the generator armature and air ducts leading to the outside of the airplane. The remote control system is automatic and the engine speed is regulated by a mechanical governor. An automatic voltage regulator controls the electric power generated to suit the 24-volt system on the airplane.

75A: Similar to 75B, but is equipped with a gear-driven supercharger. 3 kw. @ 30 v. D.C. or 10.2 kw. @ 120 v. D.C. overload output at sea level. 2 kw. @ 30 v. D.C. or 6.75 kw. @ 120 v. D.C. continuous output at sea level and at 20,000 ft. (6 100 m).

These auxiliary units are used on Navy patrol bombers. The photograph on the opposite page shows one of these units with sides and half of the top of the soundproof enclosure removed.



Onan Auxiliary 1C-68S

Onan Auxiliary Unit, Series 1C

Model .....1C-68S.

Type .....1 cylinder, vertical, air cooled, direct drive, not supercharged, 4-cycle.

Construction .....1-piece aluminum alloy crankcase with separable end bearing plate. L-type aluminum alloy cylinder with cast iron liner and aluminum alloy head. 1 inlet valve and 1 exhaust valve actuated by tappets. 1-throw 1-piece counterbalanced crankshaft supported in 2 plain bearings.

Supercharger .....None.

Carburation .....1 Zenith IA1M updraft carburetor.

Ignition .....1 Onan 1C flywheel type magneto. 1 spark plug. Shielded wiring.

Lubrication .....Pressure feed, 15 lb./sq.in. (1,0 kg/cm²).

Starter .....Hand or motorizing generator.

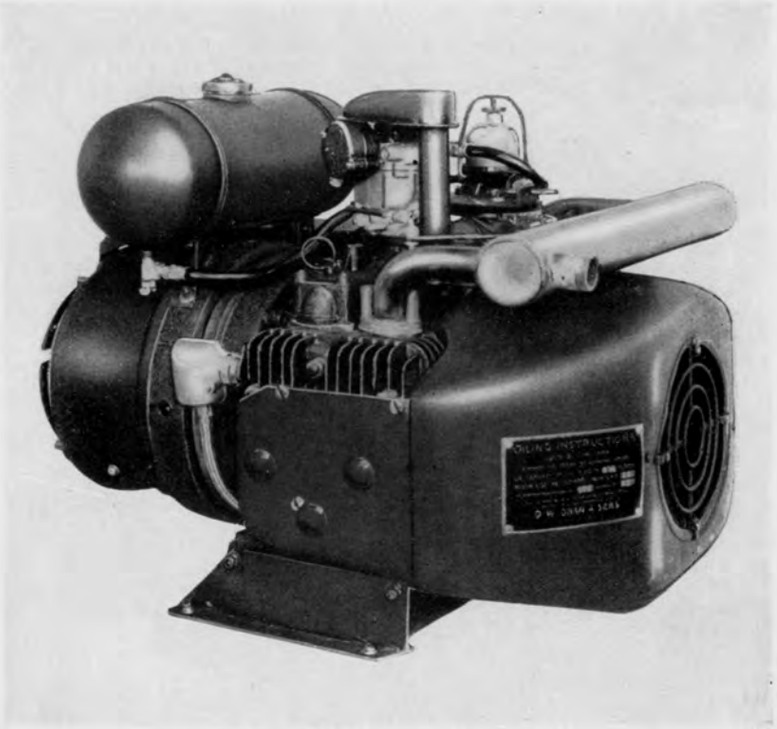
Bore	2.25 in.	57 mm
Stroke	2.25 in.	57 mm
Displacement	9 cu.in.	0,15 l
Compression ratio	5.0: 1	5,0: 1
Width	10.5 in.	0,267 m
Height	19.5 in.	0,496 m
Length	16.0 in.	0,406 m
Weight of unit (net)	62 lb.	28 kg
Weight/kw. output (cont.)	103 lb.	47 kg
Fuel consumption (cont.)	2.0 lb./kw./hr.	0,91 kg/kw/hr
Oil consumption (cont.)	0.03 lb./kw./hr.	14 g/kw/hr
Gasoline rating	67 to 100 octane	67 to 100 octane
Oil grade (viscosity)	40 S.U. secs.	4,3 cs
Output/displacement	0.21 h.p./cu.in.	12,7 hp/l
Output/piston area	0.48 h.p./sq.in.	0,07 hp/cm²
Piston speed (max.)	975 ft./min.	4,9 m/sec
B.m.e.p. (max.)	64 lb./sq.in.	4,5 kg/cm²

Output (maximum) ....1.9 h.p./2,600 r.p.m./sea level
Output (continuous) ...1.1 h.p./2,200 r.p.m./sea level
Output (at altitude).....0.9 h.p./2,200 r.p.m./10,000 ft. (3 050 m)

Output (overload).. ...0.72 kw. @ 24 v. D.C./sea level
Output (continuous) ....0.60 kw. @ 24 v. D.C./sea level
Output (at altitude)....0.43 kw. @ 24 v. D.C./10,000 ft. (3 050 m)

The engine is direct connected to a 24-28 volt D.C. Onan electric generator. The unit is mounted horizontally. Cooling is by means of a centrifugal blower. Push button start and stop. The engine speed is regulated by a mechanical governor. The voltage is regulated by the battery being charged.

Note: The above data applies to one model of the series equipped with Onan 1C engines. Other D.C. and A.C. models are available in various ratings and in any voltage or frequency, hand cranked and self-starting remote control. Standard ratings include 350, 400, 500 and 600 watts; 6-8, 12-15, 32-40 and 110 volts D.C.; 110 volts A.C.; 50, 60 and 400 cycles. The dimensions, weights and other data differ according to the model.



Onan Auxiliary OTC-80E

Onan Auxiliary Unit, Series OTC

Model .....**OTC-80E.**

Type .....2 cylinders, horizontally opposed, air cooled, direct drive, not supercharged, 4-cycle.

Construction .....1-piece aluminum alloy crankcase with separable end bearing plate. L-type aluminum alloy cylinders with cast iron liners and aluminum alloy heads. 1 inlet valve and 1 exhaust valve per cylinder actuated by tappets. 2-throw 1-piece crankshaft supported in 2 plain bearings.

Supercharger .....None.

Carburation .....1 Marvel-Schebler VD-10 downdraft carburetor with altitude compensator.

Ignition .....1 Onan OTC flywheel type magneto. 1 spark plug per cylinder. Shielded wiring.

Lubrication .....Pressure feed, 20 lb./sq.in. (1,4 kg/cm²).

Starter .....Hand or motorizing generator.

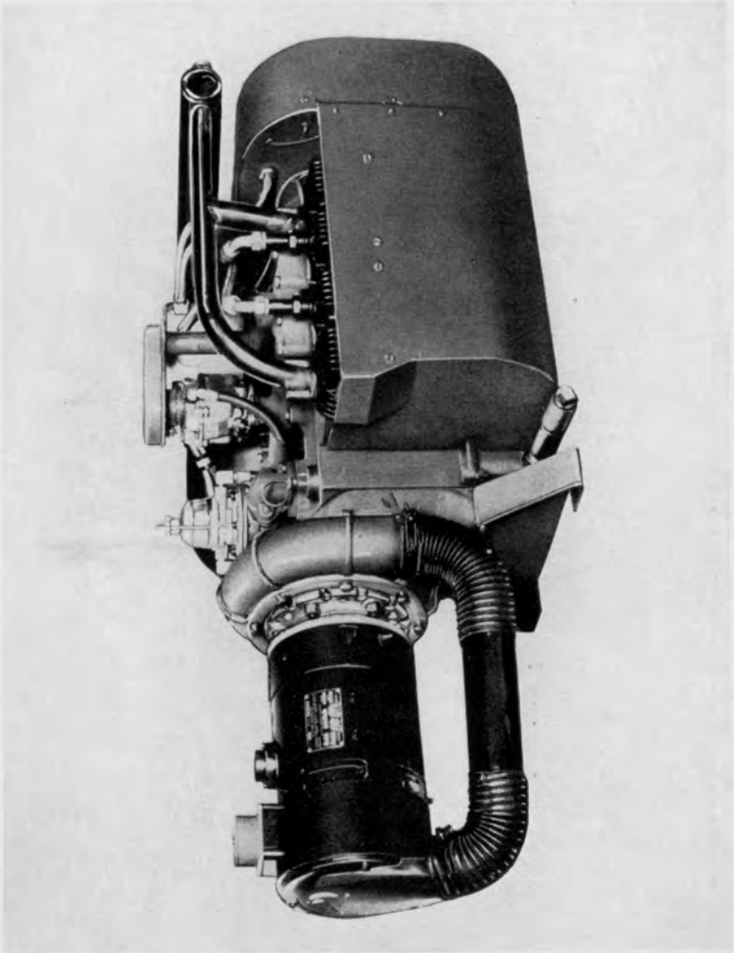
Bore	2.75 in.	70 mm
Stroke	2.25 in.	57 mm
Displacement	27 cu.in.	0,44 l
Compression ratio	5.9: 1	5,9: 1
Width	18.0 in.	0,457 m
Height	16.5 in.	0,418 m
Length	23.0 in.	0,584 m
Weight of unit (net)	113 lb.	51 kg
Weight/kw. output (cont.)	47 lb.	21 kg
Fuel consumption (cont.)	1.5 lb./kw./hr.	0,68 kg/kw/hr
Oil consumption (cont.)	0.03 lb./kw./hr.	14 g/kw/hr
Gasoline rating	67 to 100 octane	67 to 100 octane
Oil grade (viscosity)	60 S.U. secs.	10,3 cs
Output/displacement	0.20 h.p./cu.in.	12,0 hp/l
Output/piston area	0.45 h.p./sq.in.	0,07 hp/cm²
Piston speed (max.)	975 ft./min.	4,9 m/sec
B.m.e.p. (max.)	61 lb./sq.in.	4,3 kg/cm²

Output (maximum) ....5.3 h.p./2,600 r.p.m./sea level
Output (continuous) ...4.0 h.p./2,500 r.p.m./sea level
Output (at altitude).....3.5 h.p./2,500 r.p.m./10,000 ft. (3 050 m)

Output (overload).. ...2.4 kw. @ 28.5 v. D.C./sea level
Output (continuous) ....2.0 kw. @ 28.5 v. D.C./sea level
Output (at altitude)....1.3 kw. @ 28.5 v. D.C./10,000 ft. (3 050 m)

The engine is direct connected to a 28.5 volt D.C. Onan electric generator. The unit is mounted horizontally. Cooling is by means of centrifugal blowers. Starting and stopping is by means of push button remote control. The engine speed is regulated by a mechanical governor. The voltage is controlled by an automatic voltage regulator.

Note: The above data applies to one model of a series equipped with Onan OTC engines. Other D.C. and A.C. models are available in various ratings and in any voltage or frequency, hand cranked or self-starting remote control. Standard ratings include: 1,500 or 2,000 watts; 6-8, 12-15, 24-30, 38 and 115 volts D.C.; 80, 110 and 220 volts A.C.; 60, 180, 300, 400, 500 and 800 cycles; 1 and 3-phase. Dimensions, weights and other data differ according to the model.



Onan Auxiliary OFA-90

Onan Auxiliary Unit, Series OFA

Model .....OFA-90.

Type .....4 cylinders, horizontally opposed, air cooled, gear drive, not supercharged, 4-cycle.

Construction .....1-piece aluminum alloy crankcase with separable end bearing plate. L-type cast iron cylinders with aluminum alloy heads. 1 inlet valve and 1 exhaust valve per cylinder actuated by tappets. 4-throw 1-piece crankshaft supported in 3 plain bearings.

Supercharger .....None.

Carburation .....1 Marvel-Schebler VD-10 downdraft carburetor with altitude compensator.

Ignition .....1 Auto-Lite IGW 4171-6X distributor and coil. 1 spark plug per cylinder. Shielded wiring.

Lubrication .....Pressure feed, 20 lb./sq.in. (1,4 kg/cm²).

Starter .....Motorizing generator.

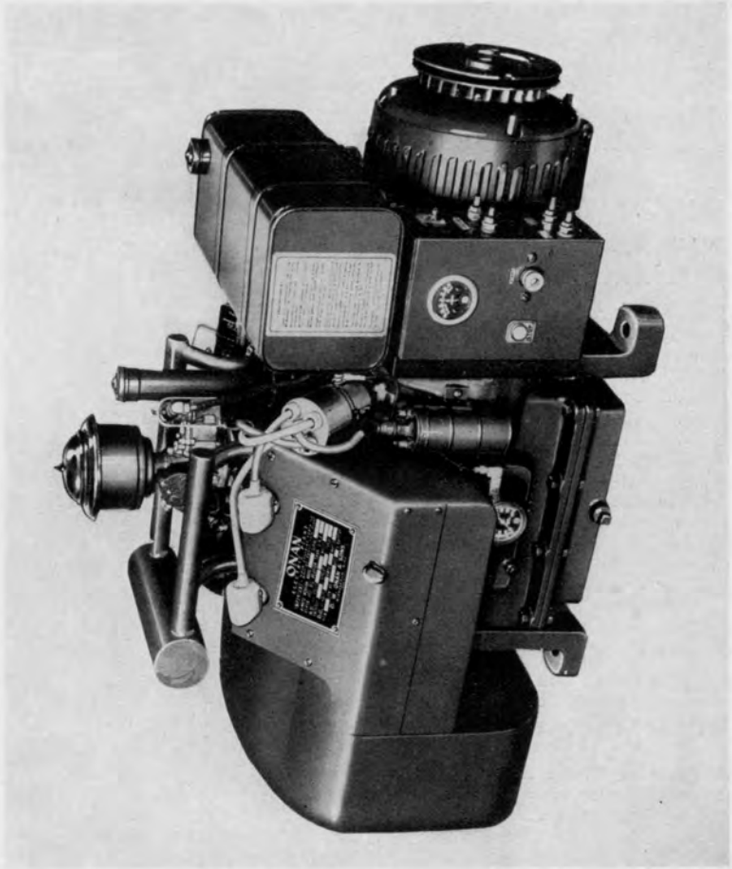
Bore	2.75 in.	70 mm
Stroke	2.25 in.	57 mm
Displacement	53 cu.in.	0,87 l
Compression ratio	5.9: 1	5,9: 1
Width	18.0 in.	0,457 m
Height	18.0 in.	0,457 m
Length	37.0 in.	0,940 m
Weight of unit (net)	200 lb.	91 kg
Weight/kw. output (cont.)	40 lb.	18 kg
Fuel consumption (cont.)	1.9 lb./kw./hr.	0,86 kg/kw/hr
Oil consumption (cont.)	0.04 lb./kw./hr.	14 g/kw/hr
Gasoline rating	67 to 100 octane	67 to 100 octane
Oil grade (viscosity)	60 S.U. secs.	10,3 cs
Output/displacement	0.25 h.p./cu.in.	15,5 hp/l
Output/piston area	0.57 h.p./sq.in.	0,09 hp/cm²
Piston speed (max.)	1,088 ft./min.	5,5 m/sec
B.m.e.p. (max.)	68 lb./sq.in.	4,8 kg/cm²

Output (maximum) ....13.5 h.p./2,900 r.p.m./sea level
Output (continuous) ...11.7 h.p./2,800 r.p.m./sea level
Output (at altitude).....9.2 h.p./2,800 r.p.m./10,000 ft. (3 050 m)
6.5 h.p./2,800 r.p.m./18,000 ft. (5 500 m)

Output (overload).. ...5.7 kw. @ 28.5 v. D.C./sea level
Output (continuous) ....5.0 kw. @ 28.5 v. D.C./sea level
Output (at altitude)....3.0 kw. @ 28.5 v. D.C./10,000 ft. (3 050 m)
2.0 kw. @ 28.5 v. D.C./18,000 ft. (5 500 m)

The engine is connected through a step-up gear to a 28.5 volt D.C. aircraft type generator. The unit is mounted horizontally. Cooling is by means of centrifugal blowers. Starting and stopping is by push button remote control. The engine speed is regulated by a mechanical governor. The voltage is controlled by an automatic voltage regulator.

Note: The above data applies to one model of a series equipped with Onan OFA engines. Other D.C. and A.C. models are available in various ratings and in any voltage or frequency. Standard ratings include 24-30, 38 and 115 volts D.C.; 80, 110 and 220 volts A.C.; 60, 180, 300, 400, 500 and 800 cycles; 1 and 3-phase. Dimensions, weights and other data differ according to the model.



Onan Auxiliary VFA-15

Onan Auxiliary Unit, Series VFA

Model ..... VFA-15.

Type ..... 4 cylinders, vee 90 degrees, air cooled, direct drive, not supercharged, 4-cycle.

Construction ..... 1-piece aluminum alloy crankcase with separable end bearing plate. L-type cast iron cylinders with aluminum alloy heads. 1 inlet valve and 1 exhaust valve per cylinder actuated by tappets. 4-throw 1-piece counterbalanced crankshaft supported in 2 plain bearings.

Supercharger ..... None.

Carburation ..... 1 Marvel-Schebler VD-10 downdraft carburetor with altitude compensator.

Ignition ..... 1 Wico JEM magneto. 1 spark plug per cylinder. Shielded wiring.

Lubrication ..... Pressure feed, 40 lb./sq.in. (2,8 kg/cm²).

Starter ..... Motorizing generator.

Bore	3.00 in.	76 mm
Stroke	2.75 in.	70 mm
Displacement	78 cu.in.	1,28 l
Compression ratio	5.8: 1	5,8: 1
Width	22.0 in.	0,559 m
Height	26.0 in.	0,660 m
Length	37.5 in.	0,953 m
Weight of unit (net)	395 lb.	179 kg
Weight/kw. output (cont.)	66 lb.	30 kg
Fuel consumption (cont.)	1.1 lb./kw./hr.	0,45 kg/kw/hr
Oil consumption (cont.)	0.04 lb./kw./hr.	18 g/kw/hr
Gasoline rating	67 to 100 octane	67 to 100 octane
Oil grade (viscosity)	60 S.U. secs.	10,0 cs
Output/displacement	0.17 h.p./cu.in.	10,3 hp/l
Output/piston area	0.46 h.p./sq.in.	0,07 hp/cm²
Piston speed (max.)	1,146 ft./min.	5,8 m/sec
B.m.e.p. (max.)	54 lb./sq.in.	3,8 kg/cm²

Output (maximum) .... 13.0 h.p./2,500 r.p.m./sea level
Output (continuous) ... 10.1 h.p./2,000 r.p.m./sea level
Output (at altitude) ..... 7.0 h.p./2,000 r.p.m./10,000 ft. (3 050 m)

Output (overload) .. ... 7.2 kw. @ 28.5 v. D.C./sea level
Output (continuous) .... 6.0 kw. @ 28.5 v. D.C./sea level
Output (at altitude) .... 4.2 kw. @ 28.5 v. D.C./10,000 ft. (3 050 m)

The engine is direct connected to a 28.5 volt D.C. Onan electric generator. The unit is mounted horizontally. Cooling is by means of centrifugal blowers. Starting and stopping is by push button remote control. The engine speed is regulated by a mechanical governor. The voltage is controlled by an automatic voltage regulator.

Note: The above data applies to one model of a series equipped with Onan VFA engines. Other D.C. and A.C. models are available in various ratings and in any voltage or frequency, electric cranking and remote control. Standard ratings include 24-28, 32-40, 110 and 140 volts D.C.; 110 and 220 volts A.C.; 50, 60, 400 and 800 cycles; 1 and 3-phase. Dimensions, weights and other data differ according to the model. Primarily for ground use, this unit may be transported by air.