

# Beechcraft®

## Bonanza® A36

(Serials E-927 thru E-2110, Except E-1946 and E-2104)

### **Pilot's Operating Handbook *and* FAA Approved Airplane Flight Manual**

FAA Approved in Utility Category based on CAR 3. This document must be carried in the airplane at all times and be kept within reach of the pilot during all flight operations.

This handbook includes the material required to be furnished to the pilot by CAR 3.

Airplane Serial Number: \_\_\_\_\_

Airplane Registration Number: \_\_\_\_\_

FAA Approved:

A. C. Jackson  
Beech Aircraft Corporation

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P/N 36-590002-17  
Issued: October, 1976

P/N 36-590002-17A12  
Revised: July, 1994

**Section II  
Limitations**

**BEECHCRAFT Bonanza A36  
E-927 and after**

**FUEL**

TOTAL FUEL with left and right wing fuel systems full:

**■** *Standard Fuel System (E-927 Thru E-1593)*

Capacity..... 50 gallons

Usable..... 44 gallons

**■** *Standard Fuel System (E-1594 and after)*

*Optional Fuel System (E-927 Thru E-1593)*

Capacity..... 80 gallons

Usable..... 74 gallons

**FUEL MANAGEMENT**

Do not take off when Fuel Quantity Gages indicate in Yellow Band or with less than 13 gallons in each wing fuel system.

Maximum slip duration is 30 seconds.

**SEATING**

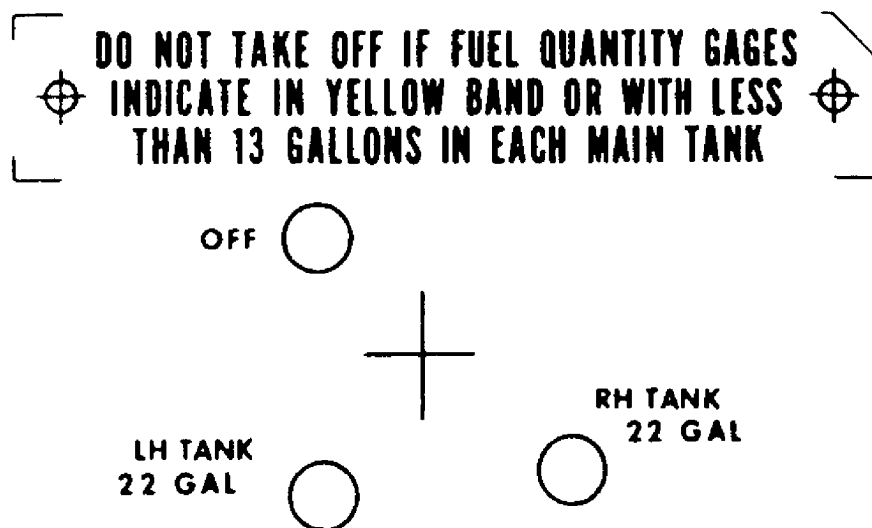
All occupied seats must be in the upright position for takeoff and landing.

**Section II**  
**Limitations**

**BEECHCRAFT Bonanza A36**  
**E-927 and after**

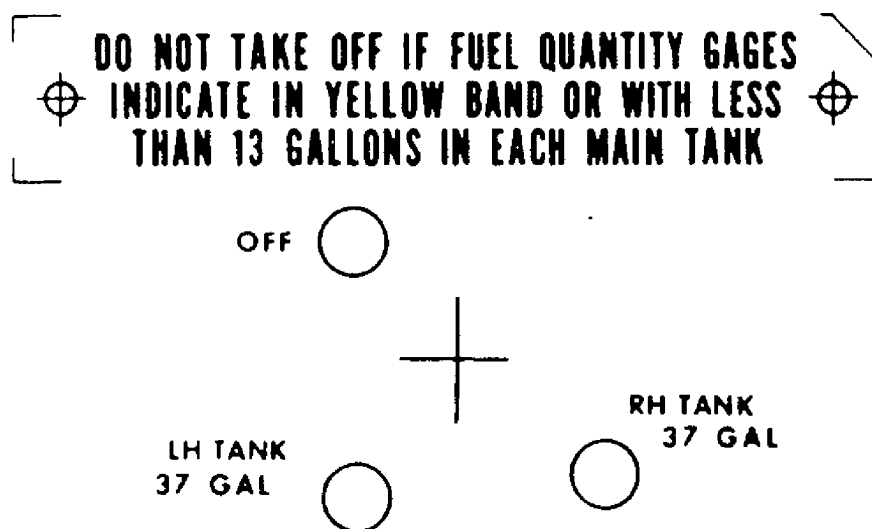
*On Fuel Selector Panel:*

*Standard 44-Gallon System (E-927 thru E-1593)*



*Optional 74-Gallon System (E-927 thru E-1593)*

*Standard 74-Gallon System (E-1594 thru 2061)*



3. Power - AS REQUIRED (avoid prolonged idle settings and low cylinder head temperatures)
4. Mixture - ENRICH AS REQUIRED

### **BEFORE LANDING**

1. Seat Belts and Shoulder Harnesses - FASTENED; Seat Backs - UPRIGHT
2. Fuel Selector Valve - SELECT TANK MORE NEARLY FULL
3. Cowl Flaps - AS REQUIRED
4. Mixture - FULL RICH or as required by field elevation
5. Landing Gear - DOWN AND CHECK (Maximum extension airspeed 153 KIAS)
6. Landing and Taxi Lights - AS REQUIRED
7. Flaps - FULL DOWN (maximum extension airspeed 123 KIAS)
8. Airspeed - ESTABLISH NORMAL LANDING APPROACH SPEED
9. Propeller - HIGH RPM

### **BALKED LANDING**

1. Power - FULL THROTTLE, 2700 RPM
2. Airspeed - 76 KTS until clear of obstacles, then trim to normal climb speed
3. Flaps - UP
4. Landing Gear - UP
5. Cowl Flaps - OPEN

### **AFTER LANDING**

1. Landing and Taxi Lights - AS REQUIRED
2. Flaps - UP
3. Trim Tab - SET TO 3°
4. Cowl Flaps - OPEN

## CRUISE POWER SETTINGS

75% MAXIMUM CONTINUOUS POWER (OR FULL THROTTLE) 2500 RPM  
3400 POUNDS

| PRESS<br>ALT. | ISA -36°F (-20°C) |       |                |           |     |     |        | STANDARD DAY (ISA) |       |                |           |     |       |       | ISA +36°F (+20°C) |      |                |           |     |     |     |
|---------------|-------------------|-------|----------------|-----------|-----|-----|--------|--------------------|-------|----------------|-----------|-----|-------|-------|-------------------|------|----------------|-----------|-----|-----|-----|
|               | IOAT              |       | MAN.<br>PRESS. | FUEL FLOW |     | TAS | CAS    | IOAT               |       | MAN.<br>PRESS. | FUEL FLOW |     | TAS   | CAS   | IOAT              |      | MAN.<br>PRESS. | FUEL FLOW |     | TAS | CAS |
|               | FEET              | °F °C | IN HG          | PPH       | GPH | KTS | KTS    | °F °C              | IN HG | PPH            | GPH       | KTS | KTS   | °F °C | IN HG             | PPH  | GPH            | KTS       | KTS |     |     |
| SL            | 27 -3             | 23.9  | 91.4           | 15.2      | 156 | 162 | 63 17  | 24.6               | 91.4  | 15.2           | 160       | 160 | 99 37 | 25.1  | 91.4              | 15.2 | 163            | 157       |     |     |     |
| 1000          | 24 -5             | 23.6  | 91.4           | 15.2      | 158 | 161 | 60 15  | 24.3               | 91.4  | 15.2           | 161       | 157 | 96 36 | 24.8  | 91.4              | 15.2 | 164            | 156       |     |     |     |
| 2000          | 20 -7             | 23.4  | 91.4           | 15.2      | 159 | 160 | 56 13  | 24.1               | 91.4  | 15.2           | 162       | 158 | 92 34 | 24.6  | 91.4              | 15.2 | 165            | 155       |     |     |     |
| 3000          | 17 -9             | 23.1  | 91.4           | 15.2      | 160 | 159 | 53 12  | 23.8               | 91.4  | 15.2           | 164       | 157 | 89 32 | 24.3  | 91.4              | 15.2 | 167            | 154       |     |     |     |
| 4000          | 13 -11            | 22.8  | 91.4           | 15.2      | 162 | 158 | 49 10  | 23.5               | 91.4  | 15.2           | 166       | 156 | 85 30 | 24.0  | 91.4              | 15.2 | 168            | 153       |     |     |     |
| 5000          | 10 -12            | 22.5  | 91.4           | 15.2      | 163 | 157 | 46 8   | 23.2               | 91.4  | 15.2           | 166       | 155 | 82 28 | 23.7  | 90.5              | 15.1 | 169            | 151       |     |     |     |
| 6000          | 8 -14             | 22.2  | 91.4           | 15.2      | 164 | 156 | 42 6   | 23.0               | 91.4  | 15.2           | 168       | 154 | 78 26 | 23.5  | 89.7              | 15.0 | 169            | 150       |     |     |     |
| 7000          | 3 -16             | 22.0  | 91.4           | 15.2      | 166 | 155 | 39 4   | 22.8               | 89.7  | 14.9           | 168       | 151 | 75 24 | 22.6  | 86.7              | 14.4 | 168            | 146       |     |     |     |
| 8000          | -1 -18            | 21.7  | 89.8           | 15.0      | 166 | 153 | 35 2   | 21.7               | 86.9  | 14.5           | 166       | 148 | 71 22 | 21.7  | 84.0              | 14.0 | 166            | 143       |     |     |     |
| 9000          | -5 -20            | 20.8  | 86.9           | 14.4      | 164 | 149 | 31 0   | 20.8               | 84.1  | 14.0           | 165       | 144 | 67 20 | 20.8  | 81.3              | 13.6 | 165            | 139       |     |     |     |
| 10,000        | -8 -22            | 20.0  | 83.7           | 13.9      | 163 | 146 | 28 -2  | 20.0               | 81.0  | 13.5           | 163       | 140 | 64 18 | 20.0  | 78.3              | 13.0 | 163            | 135       |     |     |     |
| 11,000        | -12 -24           | 19.2  | 81.4           | 13.2      | 162 | 143 | 24 -4  | 19.2               | 78.8  | 13.1           | 162       | 137 | 60 16 | 19.2  | 76.2              | 12.7 | 161            | 132       |     |     |     |
| 12,000        | -16 -26           | 18.3  | 79.1           | 13.1      | 161 | 139 | 21 -6  | 18.3               | 76.6  | 12.7           | 161       | 134 | 56 14 | 18.3  | 74.0              | 12.3 | 160            | 128       |     |     |     |
| 13,000        | -19 -28           | 17.6  | 76.0           | 12.6      | 158 | 135 | 17 -8  | 17.6               | 73.6  | 12.3           | 158       | 130 | 53 12 | 17.6  | 71.1              | 11.9 | 157            | 124       |     |     |     |
| 14,000        | -23 -31           | 16.8  | 72.9           | 12.1      | 156 | 131 | 13 -11 | 16.8               | 70.6  | 11.8           | 155       | 125 | 49 9  | 16.8  | 68.3              | 11.4 | 153            | 119       |     |     |     |
| 15,000        | -27 -33           | 16.1  | 70.4           | 11.7      | 153 | 127 | 9 -13  | 16.1               | 68.2  | 11.4           | 152       | 121 | 45 7  | 16.1  | 66.0              | 11.0 | 149            | 114       |     |     |     |
| 16,000        | -30 -35           | 15.4  | 68.0           | 11.3      | 151 | 123 | 6 -15  | 15.4               | 65.8  | 11.0           | 149       | 116 | 41 5  | 15.4  | 63.8              | 10.6 | 145            | 109       |     |     |     |

## NOTES:

1. Full throttle manifold pressure settings are approximate.
2. Shaded area represents operation with full throttle.

## CRUISE POWER SETTINGS

65% MAXIMUM CONTINUOUS POWER (OR FULL THROTTLE) 2300 RPM  
3400 POUNDS

| PRESS<br>ALT. | ISA -36°F (-20°C) |       |                |           |      |     | STANDARD DAY (ISA) |       |       |                |           |      | ISA +36°F (+20°C) |       |       |     |                |           |      |     |     |
|---------------|-------------------|-------|----------------|-----------|------|-----|--------------------|-------|-------|----------------|-----------|------|-------------------|-------|-------|-----|----------------|-----------|------|-----|-----|
|               | IOAT              |       | MAN.<br>PRESS. | FUEL FLOW |      | TAS | CAS                | IOAT  |       | MAN.<br>PRESS. | FUEL FLOW |      | TAS               | CAS   | IOAT  |     | MAN.<br>PRESS. | FUEL FLOW |      | TAS | CAS |
|               | FEET              | °F °C | IN HG          | PPH       | GPH  | KTS | KTS                | °F °C | IN HG | PPH            | GPH       | KTS  | KTS               | °F °C | IN HG | PPH | GPH            | KTS       | KTS  |     |     |
| SL            | 27                | -3    | 23.3           | 80.0      | 13.3 | 147 | 152                | 63    | 17    | 23.9           | 80.0      | 13.3 | 150               | 150   | 99    | 37  | 24.5           | 80.0      | 13.3 | 152 | 147 |
| 1000          | 23                | -5    | 23.1           | 80.0      | 13.3 | 148 | 151                | 59    | 15    | 23.8           | 80.0      | 13.3 | 151               | 149   | 95    | 35  | 24.2           | 80.0      | 13.3 | 153 | 146 |
| 2000          | 20                | -7    | 22.8           | 80.0      | 13.3 | 149 | 150                | 56    | 13    | 23.4           | 80.0      | 13.3 | 152               | 148   | 92    | 33  | 24.0           | 80.0      | 13.3 | 155 | 145 |
| 3000          | 18                | -9    | 22.5           | 80.0      | 13.3 | 150 | 149                | 52    | 11    | 23.1           | 80.0      | 13.3 | 153               | 147   | 88    | 31  | 23.7           | 80.0      | 13.3 | 156 | 144 |
| 4000          | 13                | -11   | 22.3           | 80.0      | 13.3 | 152 | 148                | 49    | 9     | 22.9           | 80.0      | 13.3 | 154               | 145   | 85    | 29  | 23.5           | 80.0      | 13.3 | 157 | 143 |
| 5000          | 9                 | -13   | 22.0           | 80.0      | 13.3 | 153 | 147                | 45    | 7     | 22.6           | 80.0      | 13.3 | 155               | 144   | 81    | 27  | 23.2           | 80.0      | 13.3 | 158 | 142 |
| 6000          | 6                 | -15   | 21.8           | 80.0      | 13.3 | 154 | 146                | 42    | 5     | 22.4           | 80.0      | 13.3 | 157               | 143   | 78    | 25  | 23.0           | 80.0      | 13.3 | 159 | 140 |
| 7000          | 2                 | -17   | 21.5           | 80.0      | 13.3 | 155 | 145                | 38    | 3     | 22.1           | 80.0      | 13.3 | 157               | 142   | 74    | 23  | 22.8           | 79.0      | 13.2 | 159 | 138 |
| 8000          | -2                | -19   | 21.3           | 80.0      | 13.3 | 156 | 144                | 35    | 1     | 21.7           | 79.4      | 13.2 | 158               | 140   | 71    | 21  | 21.7           | 78.7      | 12.8 | 157 | 135 |
| 9000          | -6                | -21   | 20.9           | 78.7      | 13.1 | 156 | 142                | 31    | -1    | 20.9           | 76.2      | 12.7 | 158               | 138   | 67    | 19  | 20.9           | 73.7      | 12.3 | 155 | 130 |
| 10,000        | -9                | -23   | 20.0           | 78.2      | 12.7 | 154 | 138                | 27    | -3    | 20.0           | 73.8      | 12.3 | 154               | 132   | 63    | 17  | 20.0           | 71.4      | 11.9 | 152 | 127 |
| 11,000        | -12               | -25   | 19.2           | 73.8      | 12.3 | 153 | 134                | 24    | -5    | 19.2           | 71.4      | 11.9 | 152               | 129   | 60    | 15  | 19.2           | 69.0      | 11.5 | 150 | 123 |
| 12,000        | -16               | -27   | 18.4           | 71.3      | 11.9 | 151 | 131                | 20    | -7    | 18.4           | 69.0      | 11.5 | 150               | 125   | 56    | 13  | 18.4           | 66.7      | 11.1 | 147 | 118 |
| 13,000        | -20               | -29   | 17.6           | 68.8      | 11.5 | 148 | 127                | 16    | -9    | 17.6           | 66.7      | 11.1 | 147               | 120   | 52    | 11  | 17.6           | 64.6      | 10.8 | 143 | 113 |
| 14,000        | -23               | -31   | 16.9           | 66.3      | 11.1 | 145 | 122                | 13    | -11   | 16.9           | 64.3      | 10.7 | 143               | 116   | 48    | 9   | 16.9           | 62.4      | 10.4 | 138 | 108 |
| 15,000        | -27               | -33   | 16.1           | 64.0      | 10.7 | 142 | 118                | 9     | -13   | 16.1           | 62.1      | 10.3 | 138               | 110   | 44    | 7   | 16.1           | 60.2      | 10.0 | 131 | 100 |
| 16,000        | -31               | -35   | 15.5           | 62.4      | 10.4 | 139 | 113                | 5     | -15   | 15.5           | 60.6      | 10.1 | 134               | 105   | ---   | --- | ---            | ---       | ---  | --- | --- |

NOTES:

1. Full throttle manifold pressure settings are approximate.
2. Shaded area represents operation with full throttle.

Section V  
Performance

BEECHCRAFT Bonanza A36  
E-927 and after

## CRUISE POWER SETTINGS

55% MAXIMUM CONTINUOUS POWER (OR FULL THROTTLE) 2100 RPM  
3400 POUNDS

| PRESS<br>ALT. | ISA -36°F (-20°C) |     |                |           |      |     |     | STANDARD DAY (ISA) |     |                |           |      |     |     | ISA +36°F (+20°C) |     |                |           |      |     |     |
|---------------|-------------------|-----|----------------|-----------|------|-----|-----|--------------------|-----|----------------|-----------|------|-----|-----|-------------------|-----|----------------|-----------|------|-----|-----|
|               | IOAT              |     | MAN.<br>PRESS. | FUEL FLOW |      | TAS | CAS | IOAT               |     | MAN.<br>PRESS. | FUEL FLOW |      | TAS | CAS | IOAT              |     | MAN.<br>PRESS. | FUEL FLOW |      | TAS | CAS |
|               | °F                | °C  | IN HG          | PPH       | GPH  | KTS | KTS | °F                 | °C  | IN HG          | PPH       | GPH  | KTS | KTS | °F                | °C  | IN HG          | PPH       | GPH  | KTS | KTS |
| SL            | 26                | -3  | 23.0           | 68.8      | 11.5 | 136 | 141 | 62                 | 17  | 23.6           | 68.8      | 11.5 | 138 | 138 | 98                | 37  | 24.2           | 68.8      | 11.5 | 140 | 136 |
| 1000          | 23                | -5  | 22.8           | 68.8      | 11.5 | 137 | 140 | 59                 | 15  | 23.3           | 68.8      | 11.5 | 139 | 137 | 95                | 35  | 24.0           | 68.8      | 11.5 | 141 | 134 |
| 2000          | 19                | -7  | 22.5           | 68.8      | 11.5 | 138 | 139 | 55                 | 13  | 23.1           | 68.8      | 11.5 | 140 | 136 | 91                | 33  | 23.7           | 68.8      | 11.5 | 142 | 133 |
| 3000          | 15                | -9  | 22.3           | 68.8      | 11.5 | 139 | 138 | 52                 | 11  | 22.9           | 68.8      | 11.5 | 141 | 135 | 88                | 31  | 23.5           | 68.8      | 11.5 | 142 | 132 |
| 4000          | 12                | -11 | 22.1           | 68.8      | 11.5 | 139 | 138 | 48                 | 9   | 22.6           | 68.8      | 11.5 | 141 | 133 | 84                | 29  | 23.2           | 68.8      | 11.5 | 143 | 130 |
| 5000          | 8                 | -13 | 21.8           | 68.8      | 11.5 | 140 | 135 | 45                 | 7   | 22.4           | 68.8      | 11.5 | 142 | 132 | 81                | 27  | 23.0           | 68.8      | 11.5 | 143 | 129 |
| 6000          | 5                 | -15 | 21.6           | 68.8      | 11.5 | 141 | 134 | 41                 | 5   | 22.1           | 68.8      | 11.5 | 143 | 131 | 77                | 25  | 22.7           | 68.8      | 11.5 | 144 | 127 |
| 7000          | 1                 | -17 | 21.3           | 68.8      | 11.5 | 142 | 133 | 37                 | 3   | 21.9           | 68.8      | 11.5 | 143 | 129 | 74                | 23  | 22.5           | 68.8      | 11.5 | 144 | 126 |
| 8000          | -2                | -19 | 21.1           | 68.8      | 11.5 | 142 | 131 | 34                 | 1   | 21.6           | 68.8      | 11.5 | 144 | 128 | 70                | 21  | 21.9           | 67.5      | 11.3 | 143 | 122 |
| 9000          | -6                | -21 | 20.9           | 68.8      | 11.5 | 143 | 130 | 30                 | -1  | 21.0           | 67.8      | 11.3 | 143 | 125 | 66                | 19  | 21.0           | 65.6      | 10.9 | 140 | 118 |
| 10,000        | -8                | -23 | 20.1           | 68.0      | 11.3 | 142 | 127 | 27                 | -3  | 20.2           | 65.8      | 11.0 | 141 | 121 | 63                | 17  | 20.1           | 63.8      | 10.6 | 137 | 114 |
| 11,000        | -13               | -25 | 19.3           | 66.0      | 11.0 | 140 | 124 | 23                 | -5  | 19.3           | 63.9      | 10.7 | 138 | 117 | 59                | 15  | 19.3           | 62.0      | 10.3 | 133 | 109 |
| 12,000        | -17               | -27 | 18.5           | 63.9      | 10.7 | 136 | 119 | 19                 | -7  | 18.5           | 62.1      | 10.3 | 134 | 112 | 55                | 13  | 18.5           | 60.2      | 10.0 | 127 | 102 |
| 13,000        | -20               | -29 | 17.7           | 61.8      | 10.3 | 134 | 115 | 15                 | -9  | 17.7           | 60        | 10.0 | 128 | 106 | ---               | --- | ---            | ---       | ---  | --- | --- |
| 14,000        | -24               | -31 | 16.9           | 59.7      | 10.0 | 129 | 109 | 11                 | -11 | 16.9           | 57.9      | 9.8  | 120 | 97  | ---               | --- | ---            | ---       | ---  | --- | --- |
| 15,000        | -28               | -33 | 16.2           | 57.6      | 9.6  | 123 | 102 | ---                | --- | ---            | ---       | ---  | --- | --- | ---               | --- | ---            | ---       | ---  | --- | --- |
| 16,000        | -32               | -36 | 15.6           | 55.8      | 9.3  | 112 | 92  | ---                | --- | ---            | ---       | ---  | --- | --- | ---               | --- | ---            | ---       | ---  | --- | --- |

NOTES:

1. Full throttle manifold pressure settings are approximate.
2. Shaded area represents operation with full throttle.

BEECHCRAFT Bonanza A36  
E-927 and afterSection V  
Performance

# CRUISE POWER SETTINGS

45% MAXIMUM CONTINUOUS POWER (OR FULL THROTTLE) 2100 RPM  
3400 POUNDS

Section V  
Performance

BEECHCRAFT Bonanza A36  
E-927 and after

| PRESS<br>ALT. | ISA -36°F (-20°C) |     |                |           |     |     | STANDARD DAY (ISA) |      |     |                |           |     | ISA +36°F (+20°C) |     |      |     |                |           |     |     |     |
|---------------|-------------------|-----|----------------|-----------|-----|-----|--------------------|------|-----|----------------|-----------|-----|-------------------|-----|------|-----|----------------|-----------|-----|-----|-----|
|               | IOAT              |     | MAN.<br>PRESS. | FUEL FLOW |     | TAS | CAS                | IOAT |     | MAN.<br>PRESS. | FUEL FLOW |     | TAS               | CAS | IOAT |     | MAN.<br>PRESS. | FUEL FLOW |     | TAS | CAS |
|               | FEET              | °F  | °C             | IN HG     | PPH | GPH | KTS                | KTS  | °F  | °C             | IN HG     | PPH | GPH               | KTS | KTS  | °F  | °C             | IN HG     | PPH | GPH | KTS |
| SL            | 25                | -4  | 20.4           | 57.6      | 9.6 | 122 | 127                | 62   | 16  | 20.8           | 57.6      | 9.6 | 124               | 124 | 98   | 36  | 21.2           | 57.6      | 9.6 | 125 | 121 |
| 1000          | 22                | -6  | 20.1           | 57.6      | 9.6 | 123 | 125                | 58   | 14  | 20.5           | 57.6      | 9.6 | 125               | 123 | 94   | 34  | 20.9           | 57.6      | 9.6 | 126 | 120 |
| 2000          | 18                | -8  | 19.8           | 57.6      | 9.6 | 124 | 124                | 54   | 12  | 20.2           | 57.6      | 9.6 | 125               | 121 | 91   | 32  | 20.6           | 57.6      | 9.6 | 126 | 118 |
| 3000          | 15                | -10 | 19.4           | 57.6      | 9.6 | 124 | 123                | 51   | 11  | 19.9           | 57.6      | 9.6 | 126               | 120 | 87   | 31  | 20.3           | 57.6      | 9.6 | 127 | 117 |
| 4000          | 11                | -12 | 19.1           | 57.6      | 9.6 | 125 | 122                | 47   | 9   | 19.6           | 57.6      | 9.6 | 126               | 119 | 83   | 29  | 20.0           | 57.6      | 9.6 | 127 | 115 |
| 5000          | 8                 | -13 | 18.8           | 57.6      | 9.6 | 125 | 121                | 44   | 7   | 19.3           | 57.6      | 9.6 | 127               | 118 | 80   | 27  | 19.7           | 57.6      | 9.6 | 127 | 114 |
| 6000          | 4                 | -15 | 18.5           | 57.6      | 9.6 | 126 | 120                | 40   | 5   | 19.0           | 57.6      | 9.6 | 127               | 116 | 76   | 25  | 19.4           | 57.6      | 9.6 | 127 | 112 |
| 7000          | 1                 | -17 | 18.2           | 57.6      | 9.6 | 126 | 118                | 37   | 3   | 18.7           | 57.6      | 9.6 | 127               | 114 | 73   | 23  | 19.1           | 57.6      | 9.6 | 127 | 110 |
| 8000          | -3                | -19 | 17.9           | 57.6      | 9.6 | 127 | 117                | 33   | 1   | 18.4           | 57.6      | 9.6 | 127               | 113 | 69   | 21  | 18.8           | 57.6      | 9.6 | 126 | 108 |
| 9000          | -6                | -21 | 17.6           | 57.6      | 9.6 | 127 | 115                | 30   | -1  | 18.1           | 57.6      | 9.6 | 127               | 111 | 66   | 19  | 18.5           | 57.6      | 9.6 | 125 | 106 |
| 10,000        | -10               | -23 | 17.3           | 57.6      | 9.6 | 127 | 114                | 26   | -3  | 17.8           | 57.6      | 9.6 | 126               | 109 | 62   | 17  | 18.2           | 57.6      | 9.6 | 124 | 103 |
| 11,000        | -14               | -25 | 17.0           | 57.6      | 9.6 | 127 | 112                | 22   | -5  | 17.4           | 57.6      | 9.6 | 125               | 106 | 58   | 15  | 17.9           | 57.6      | 9.6 | 122 | 100 |
| 12,000        | -17               | -27 | 16.7           | 57.6      | 9.6 | 127 | 110                | 19   | -7  | 17.1           | 57.6      | 9.6 | 124               | 104 | 55   | 13  | 17.6           | 57.6      | 9.6 | 118 | 95  |
| 13,000        | -21               | -29 | 16.4           | 57.6      | 9.6 | 126 | 108                | 15   | -9  | 16.8           | 57.6      | 9.6 | 122               | 100 | ---  | --- | ---            | ---       | --- | --- | --- |
| 14,000        | -24               | -31 | 16.1           | 57.6      | 9.6 | 125 | 105                | 11   | -11 | 16.5           | 57.6      | 9.6 | 119               | 96  | ---  | --- | ---            | ---       | --- | --- | --- |
| 15,000        | -28               | -33 | 15.7           | 57.6      | 9.6 | 123 | 102                | ---  | --- | ---            | ---       | --- | ---               | --- | ---  | --- | ---            | ---       | --- | --- | --- |
| 16,000        | -32               | -36 | 15.4           | 55.6      | 9.3 | 113 | 92                 | ---  | --- | ---            | ---       | --- | ---               | --- | ---  | --- | ---            | ---       | --- | --- | --- |

NOTES:

1. Full throttle manifold pressure settings are approximate.
2. Shaded area represents operation with full throttle.

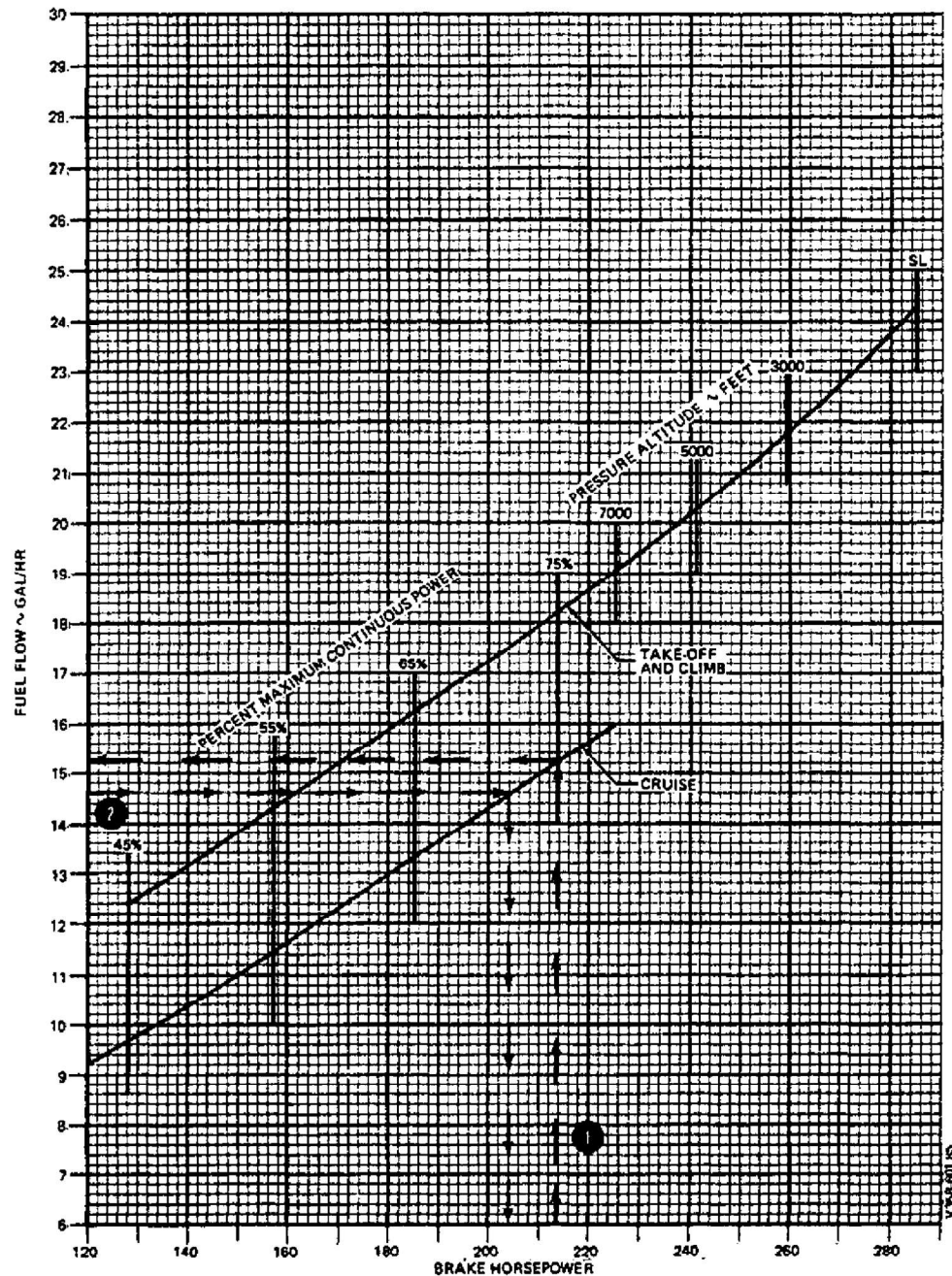
**BEECHCRAFT Bonanza A36**  
**E-927 and after**

**Section V**  
**Performance**

**FUEL FLOW vs BRAKE HORSEPOWER**

EXAMPLE:

|   |                            |                     |
|---|----------------------------|---------------------|
| 1 | BRAKE HORSEPOWER . . . . . | 213.75              |
|   | 75% MCP                    |                     |
|   | CONDITION . . . . .        | LEVEL FLIGHT CRUISE |
|   | FUEL FLOW . . . . .        | 15.25 GAL/HR        |
| 2 | FUEL FLOW . . . . .        | 14.6 GAL/HR         |
|   | CONDITION . . . . .        | LEVEL FLIGHT CRUISE |
|   | BRAKE HORSEPOWER . . . . . | 204                 |



# ENDURANCE PROFILE – 74 GALLONS

STANDARD DAY (ISA)

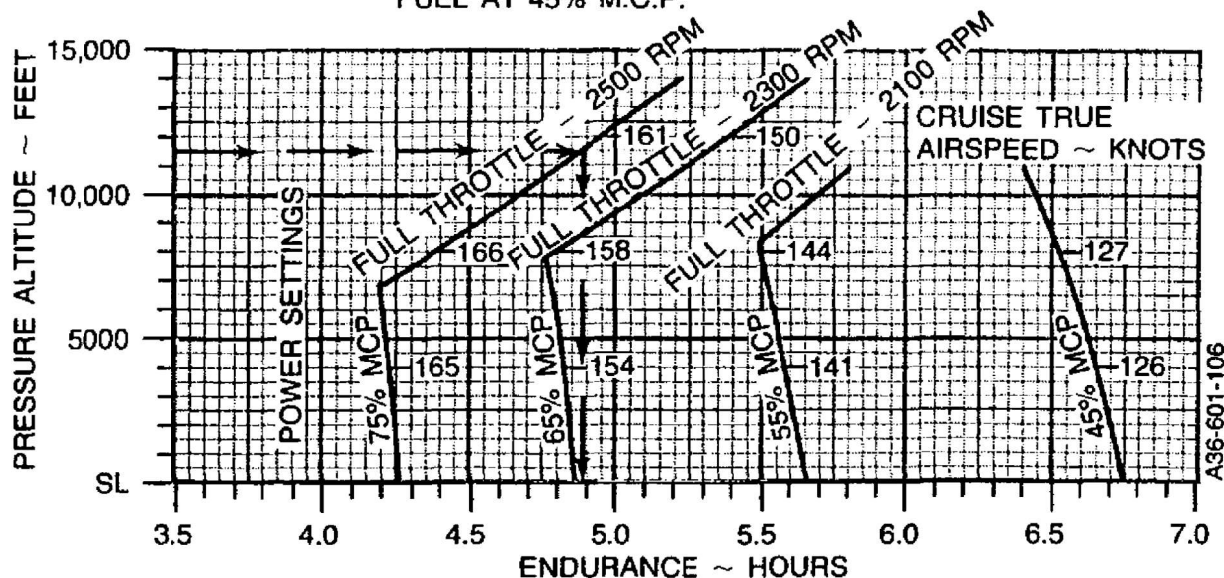
## ASSOCIATED CONDITIONS:

WEIGHT ..... 3612 LBS BEFORE  
ENGINE START  
FUEL ..... AVIATION GASOLINE  
FUEL DENSITY ..... 6.0 LBS/GAL  
INITIAL FUEL LOADING ..... 74 U.S. GAL (444 LBS)  
TAKE-OFF ALTITUDE ..... SL

## EXAMPLE:

CRUISE ALTITUDE ..... 11,500 FT  
POWER SETTING ..... FULL THROTTLE –  
2500 RPM  
ENDURANCE ..... 4.9 HRS  
(4 HRS, 54 MIN)

NOTE: ENDURANCE INCLUDES START, TAXI,  
CRUISE CLIMB, AND 45 MIN RESERVE  
FUEL AT 45% M.C.P.



Section V  
Performance

BEECHCRAFT Bonanza A36  
E-927 and after

Included in the square cluster are the cylinder head temperature and oil temperature (both calibrated in degrees Celsius), ammeter, and oil pressure. A fuel quantity indicator is located on each side of the cluster, the left indicator for the left wing fuel and the right indicator for the right wing fuel.

### ***MANIFOLD PRESSURE AND FUEL FLOW INDICATOR***

The manifold pressure portion of this instrument indicates the pressure in the engine manifold and is calibrated in inches of mercury. By observing the manifold pressure indication and adjusting the propeller and throttle controls, the power output of the engine can be adjusted. To avoid excessive cylinder pressures during cruise operations, observe the maximum recommended rpm and manifold pressure limits as indicated on the Manifold Pressure vs RPM graph in the PERFORMANCE Section.

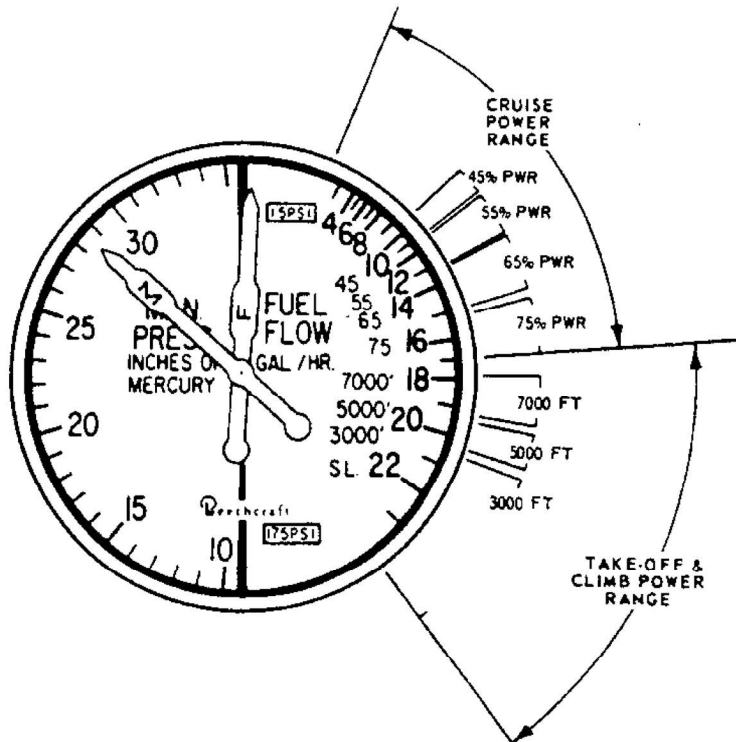
#### ***For Airplanes With Fuel Pressure Indicating Systems (Serials E-927 thru E-1765)***

The fuel flow portion of the indicator senses fuel pressure at the fuel distributor and is calibrated to indicate fuel flow in gallons per hour. The green arc indicates the normal fuel flow operating range while the red radials indicate the minimum and maximum allowable fuel pressures.

The higher end of the green arc includes a sawtooth segment to indicate the approximate fuel flow required for takeoff and climb at sea level, 3000, 5000 and 7000 feet. The pilot should use performance charts for the exact fuel flow requirements.

The lower end of the green arc includes a sawtooth segment labeled "% CRUISE POWER" which indicates the approximate fuel flows for powers ranging from 45% to 75% of maximum continuous power. The lower fuel flow of

each sawtooth corresponds to the cruise-lean fuel flow while the higher fuel flow of each sawtooth corresponds to the best power fuel flow. When power is set in accordance with the cruise power setting tables in the PERFORMANCE section, these sawtooth markings provide approximate percent power information.



### MANIFOLD PRESSURE AND FUEL FLOW INDICATOR (E 927 THRU E-1765)

*For Airplanes With Fuel Flow Indicating Systems  
(Serials E-1766 and after)*

The fuel flow portion of the indicator is controlled electrically and indicates fuel flow in gallons per hour. A turbine meter installed in the fuel line rotates in proportion to the fuel flow. The speed of rotation is converted into an electrical signal which is then interpreted by the fuel flow indicator. The green arc indicates the normal operating range while the red radial indicates the maximum allowable fuel flow.

## **PROPELLER**

Installed as standard equipment on the Bonanza is a constant speed, variable pitch, 84"-diameter propeller with two aluminum alloy blades. The pitch setting at the 30-inch station is 13.3° low and 29.2° high pitch.

An optional McCauley 80"-diameter, three-blade propeller is also available. The pitch setting at the 30-inch station is 13.3"  $\pm$  .2° low and 29.0"  $\pm$  .5° high pitch.

Propeller rpm is controlled by a governor which regulates hydraulic oil pressure to the hub. A push-pull knob on the control console allows the pilot to select the governor's rpm range.

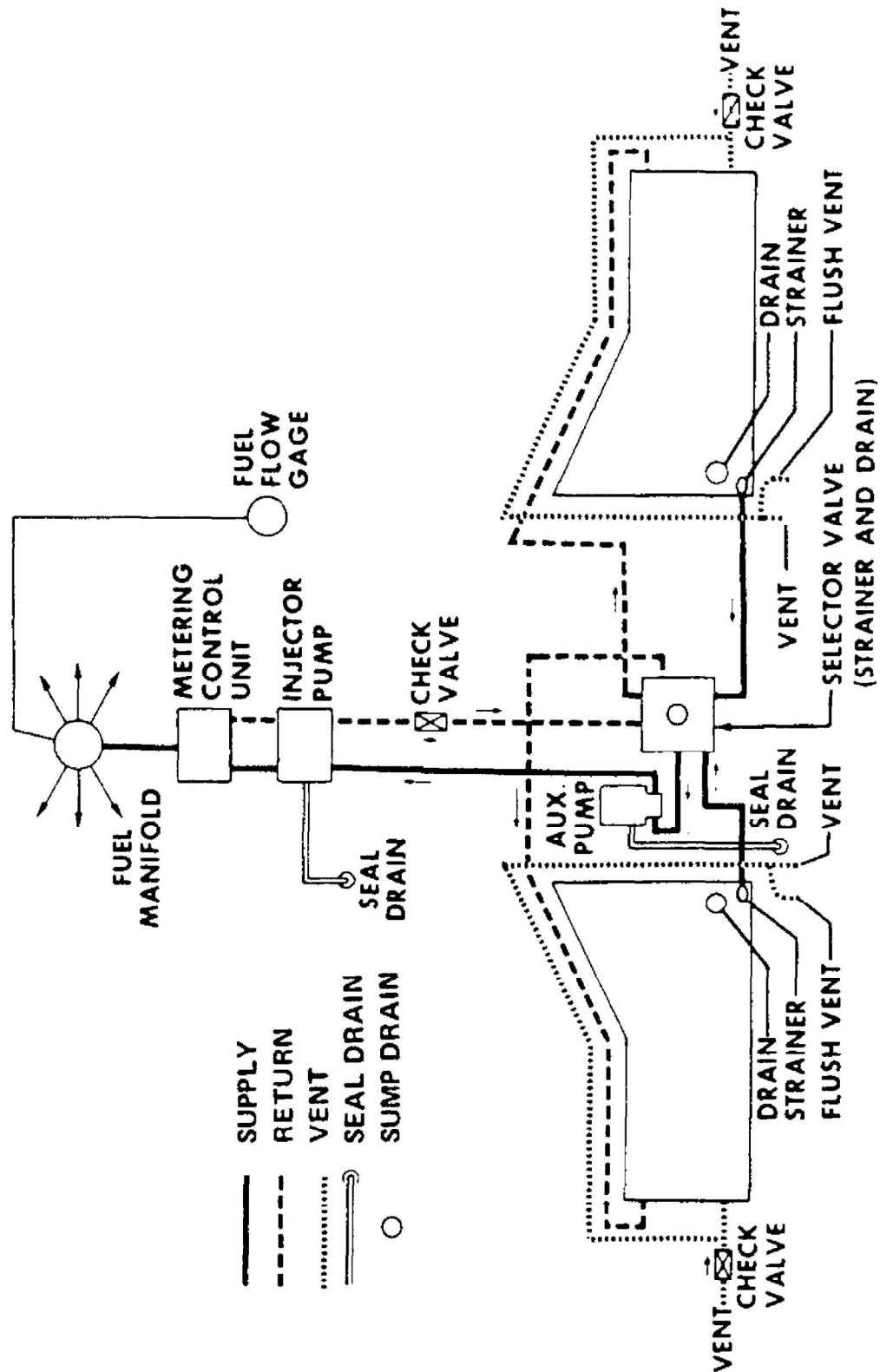
If oil pressure is lost, the propeller will go to the full high rpm position. This is because propeller low rpm is obtained by governor boosted engine oil pressure working against the centrifugal twisting moment of the blades.

## **FUEL SYSTEM**

The airplane is designed for operation on 100/130 grade (green) aviation gasoline. However, the use of 100LL (blue) is preferred.

## **FUEL CELLS**

On E-927 thru E-1593 either the 50-gallon capacity (44-gallon usable) or 80-gallon capacity (74-gallon usable) fuel system is available. Only the 80-gallon capacity (74-gallon usable) system is available on E-1594 and after. The fuel system consists of a rubber fuel cell in each wing leading edge with a flush type filler cap. A visual measuring tab is attached to the filler neck of the optional system. The bottom of the tab indicates 27 gallons of usable fuel and



FUEL SYSTEM SCHEMATIC

the detent on the tab indicates 32 gallons of usable fuel in the tank. The engine driven fuel injector pump delivers approximately 10 gallons of excess fuel per hour, which bypasses the fuel control and returns to the tank being used. Three fuel drains are provided, one in each fuel sump on the underside of each wing and one in the fuel selector valve inboard of the left wing root. These points should be drained daily before the first flight.

#### **FUEL QUANTITY INDICATION SYSTEM**

Fuel quantity is measured by float operated sensors, located in each wing tank system. These transmit electrical signals to the individual indicators, which indicate fuel remaining in the tank. There are sensors in each wing tank system connected to the individual wing tank indicator.

#### **AUXILIARY FUEL PUMP**

The electric auxiliary fuel pump is controlled by an ON-OFF toggle switch on the control console and provides pressure for starting and emergency operation. Immediately after starting, the auxiliary fuel pump can be used to purge the system of vapor caused by an extremely high ambient temperature or a start with the engine hot. The auxiliary fuel pump provides for near maximum engine fuel requirements, should the engine driven pump fail.

#### **FUEL TANK SELECTION**

The fuel selector valve handle is located forward and to the left of the pilot's seat. Takeoffs and landings should be made using the tank that is more nearly full.

## **FUEL REQUIRED FOR FLIGHT**

It is the pilot's responsibility to ascertain that the fuel quantity indicators are functioning and maintaining a reasonable degree of accuracy, and to be certain of ample fuel for a flight. Takeoff is prohibited if the fuel quantity indicators do not indicate above the yellow arc. An inaccurate indicator could give an erroneous indication of fuel quantity. A minimum of 13 gallons of fuel is required in each tank before takeoff. The caps should be removed and fuel quantity checked to give the pilot an indication of fuel on board. The airplane must be approximately level for visual inspection of the tank. If it is not certain that at least 13 gallons are in each tank, fuel shall be added so that the amount of fuel will be not less than 13 gallons per tank at takeoff. Plan for an ample margin of fuel for any flight.

## **ELECTRICAL SYSTEM**

The system circuitry is the single-wire, ground-return type, with the airplane structure used as the ground return. The battery ON-OFF switch, the alternator ON-OFF switch and the magneto/start switch are located on the left subpanel. The circuit breaker panel is located on the right subpanel and contains circuit breakers for the various electrical systems. Some switch-type circuit breakers are located on the left subpanel.

## **BATTERY**

### ***28-VOLT SYSTEM (E-1111, E-1241 and after)***

A 15.5-ampere-hour, 24-volt battery is located on the right forward side of the firewall. Battery servicing procedures are described in the HANDLING, SERVICING, AND MAINTENANCE Section.