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#### FEATURES:

**ALGEBRAIC ENTRY** —
Allows entry of numbers and arithmetic functions in the same sequence as the problem develops.

**FLOATING DECIMAL (Arithmetic Operation)** —
Decimal point is automatically positioned to display eight digit accuracy.

**AUTO CONSTANT** —
Permits repetitive addition, subtraction, multiplication and division operations without re-entering constant or function. The first number entered is constant.

**RUGGED CONSTRUCTION** —
High impact ABS plastic case and full solid state integrated circuitry.

**OPERATING TIME** —
High efficiency circuits permit approximately 4 hours of continuous use.

**POWER SUPPLY** —
Ni-Cad rechargeable industrial batteries will provide thousands of hours of service life. (See BATTERY CARE.)

**AIRCRAFT POWER CORD** —
Designed to automatically provide proper operating voltage to your novtronic when supplied with 12 - 28 volts D.C. (Plugs into cigarette lighter.)
KEY FUNCTIONS

DATA KEYS:

1 - 0
Press to display numbers.

+/-
Press once to display decimal point. This key is also used to display “Time” data in hours, minutes and seconds. (See Timer Operation example.)

+/
Press to change the sign of the number shown in the display. This key is also used to display negative data when necessary for flight program processing.

CONVERSION KEY:
Display data then press conversion key immediately prior to desired arithmetic key to convert data displayed to nautical, statute, ° centigrade or ° fahrenheit as indicated on the panel above arithmetic key pressed.

SHIFT KEY:
The Shift key must be pressed first to activate a gold legend program. When in a gold legend program and the prompters light use the gold prompter titles.

CLEAR KEY:
Press once to clear display. Press twice to clear computer.

ENTRY KEY:
Press after displaying requested data for flight program processing.

DISPLAY DIMMER SWITCH:
Set to desired display brightness.

PROGRAM KEYS:

WV + WD
Press to initiate Unknown Wind program.

D ALT
Press to initiate Density Altitude program.

TAS
Press to initiate True Air Speed program.

CAS
Press to initiate Calibrated Air Speed program.

ROC
Press to initiate Rate Of Climb program.

SPO RATE
Press to initiate Ground Speed program or Fuel Consumption Rate program.

DIS FUEL
Press to initiate Range program, Fuel Required program, Distance Traveled program or Fuel Consumed program.

TIME
Press to initiate Time Enroute program or Endurance program.

GS + HD
Press to initiate Estimated Ground Speed & Heading program.

WT + BL
Press to initiate Weight & Balance program.

?WT
Press to initiate Unknown Weight program.

?DIST
Press to initiate Unknown Distance program.

?NU
Press to initiate RNAV program.

See page 27 for an explanation of the Timer Keys.

WEIGHT & BALANCE MODE SWITCH:
Set to desired position for center of gravity or moment data entry in weight & balance program.
BATTERY CARE

Your navtronic is powered by a rechargeable Ni-CAD battery pack, which will last indefinitely when used properly. Since rechargeable Ni-CAD batteries develop a "memory" of operating time between charges, we recommend that you occasionally "retrain" your batteries by completely discharging them and then bringing them back up to full charge. To expedite discharging, turn on your navtronic, display 88888888 and set the display dimmer switch to "BRK". When the display is no longer visible, turn your navtronic off and connect the A.C. charger. Your batteries will be fully charged in 6 hours. You may operate your navtronic with the A.C. charger connected. However, the recharge time will be about twice as long with the navtronic operating. WARNING! DO NOT OVERCHARGE! BATTERIES CAN BE PERMANENTLY DAMAGED BY REPEATED OVERCHARGING! You may leave the A.C. charger connected for up to 24 hours without fear of overcharging. However, it should be disconnected from both the navtronic and the A.C. power source when not in use.

Your navtronic comes complete with an aircraft power cord designed to operate over a range of 12 to 28 volts D.C. This power cord is designed to protect your navtronic against transient power surges caused by other aircraft equipment. It is not recommended for use to recharge your batteries.

The batteries in your navtronic should not be recharged in ambient temperatures of less than 10°C (50°F) as they are vulnerable to damage when charged at low temperatures.

SPECIAL SYMBOLS

When symbols show in display window:

C indicates overflow condition - restart problem
E indicates improper data entered
L indicates low battery.

ARITHMETIC OPERATIONS EXAMPLES

FLOATING DECIMAL POINT DISPLAY:

12 3 4 5 6 7 8 x 12.345678
1 0 0 0 2 12345.678
1 0 0 2 123.45678

CLEAR ENTRY:

123.45678 x 110 = 13560.245
1 2 3 7 4 5 6 7 8 x 123.45678
1 1 1 2 0 0 0 0 0 0 0
1 1 0 = 13560.245

OVERFLOW:

9 8 7 6 5 4 3 x 9876543
2 1 0 0
2 1 2 0 0

CHANGE SIGN:

123 x (-.45) = -55.35
1 2 3 8 7 4 5 7 = -55.35

ADDITION:

1234 + 9876 = 11110
1 2 3 4 + 9 8 7 6 = 11110.

SUBTRACTION:

123.4 - 56.78 = 66.62
1 2 3 7 4 - 5 6 7 8 6 = 66.62
MULTIPLICATION:
\((-543) \times 21 = -11,403\)

\[7 \times 5 \times 4 \times 3 \times 2 \times 1 = -11,403\]

DIVISION:
\(23 \div 45.678 = .5035246\)

\[2 \div 3 \div 45 \div 7 \div 6 \div 8 = .05035246\]

SQUARE:
\(14^2 = 196\)
\(2.73^2 = 7.4529\)

\[1 \times 4 \times 1 = 196\]
\[2 \times 7 \times 3 \times 1 = 7.4529\]

POWER OF NUMBER:
\(21^3 = 9,261\)
\(.69^5 = .0282475\)

\[2 \times 1 \times 1 = 9261\]
\[7 \times 4 \times 9 \times 1 = .0282475\]

RECIPIROCAL:
\(x = 37\)
\(1/x = .027027\)

\[1 \div 3 \div 7 = 0.027027\]

CHAIN OPERATION:
\(\frac{(2 \times 3 + 8)}{2} - 5 = -33\)

\[2 \times 3 + 8 \times 2 = -33\]
\[7 \div 7 - 5 = 0.0783783\]

AUTOMATIC CONSTANT:
\(1.79 + 3.8 = 4.58\)
\(1.79 + 2.94 = 4.73\)
\(1.79 + 4.73 = 6.52\)

\[1 \div 7 \div 9 \div 3 \div 8 = 41.58\]
\[2 \div 8 \div 9 = 6.52\]
\[3.74 - 2.86 = .78\]
\[3.74 - 1.89 = 1.85\]

\[3 \div 7 \div 4 \div 2 \div 9 = 0.78\]
\[1 \div 7 \div 8 \div 9 = 1.85\]

\[4.63 - 2.85 = 1.78\]
\[6.27 - 2.85 = 3.42\]

\[2 \div 8 \div 5 \div 7 + 4 \div 7 \div 6 \div 3 = 1.78\]
\[6 \div 7 \div 2 \div 7 = 3.42\]

\[2.8 \times 3.5 \times 2 = 27.44\]
\[2.8 \times 7 = 21.28\]

\[2 \div 7 \div 8 \div 3 \div 7 \div 5 = 27.44\]
\[7 \div 6 \div 2 \div 7 = 21.28\]

\[483 \div .19 = 2542.1052\]
\[483 \div 3 = 161\]

\[4 \times 8 \div 3 \div 1 \div 9 = 2542.1052\]
\[3 \div 6 \div 3 \div 7 \div 1 \div 9 = 161\]

\[621 \div 37 = 16.783783\]
\[2.9 \div 37 = .0783783\]

\[1 \div 3 \div 7 \times 6 \div 2 \div 1 = 16.783783\]
\[2 \div 7 \div 9 = 0.0783783\]
TIME ADDITION:
2 hrs. 34 min. 51 sec.
+ 48 min. 27 sec. = 3 hrs. 23 min. 18 sec.
\[ \frac{2}{7} \frac{7}{4} \frac{3}{4} \frac{4}{2} \frac{5}{1} = \]
\[ \frac{7}{1} \frac{4}{8} \frac{2}{7} \frac{2}{7} = \]
\[ 03 \ 23 \ 18 \]

TIME SUBTRACTION:
12 hrs. 34 min. 56 sec.
− 5 hrs. 26 min. 47 sec. = 7 hrs. 8 min. 9 sec.
\[ \frac{1}{2} \frac{2}{2} \frac{3}{4} \frac{7}{5} \frac{6}{6} = \]
\[ \frac{5}{7} \frac{7}{2} \frac{6}{4} \frac{7}{7} \frac{4}{7} = \]
\[ 07 \ 00 \ 09 \]

TIME MULTIPLICATION:
7.4 x 6 hrs. 34 min. = 48 hrs. 35 min. 36 sec.
\[ \frac{7}{7} \frac{7}{4} \frac{3}{6} \frac{7}{7} \frac{3}{4} \frac{4}{4} = \]
\[ 48 \ 35 \ 36 \]

TIME DIVISION:
57 hrs. 3 min. 9 sec. ÷ 8 = 7 hrs. 7 min. 53 sec.
\[ \frac{5}{7} \frac{7}{7} \frac{3}{7} \frac{9}{9} \]
\[ \div \ 8 \frac{7}{7} \]
\[ 07 \ 07 \ 53 \]

5 hrs. 24 sec. ÷ 23 min. 18 sec. = 12.8925
\[ \frac{5}{7} \frac{7}{7} \frac{7}{2} \frac{4}{2} \]
\[ \div \ 7 \frac{7}{2} \frac{3}{7} \frac{1}{7} = \]
\[ + \frac{7}{7} = \]
\[ 12.8925 \]

NOTE: When solving time arithmetic problems the answer will be in the same format as the last number entered.

CONVERSIONS

TIME:
2 hrs. 8 min. 19 sec. = 2.1386111 hrs.
\[ \frac{2}{7} \frac{7}{3} \frac{4}{7} \frac{1}{9} \frac{1}{9} \frac{1}{9} = \]
\[ 2.1386111 \]

3.47513 hrs. = 3 hrs. 28 min. 30 sec.
\[ \frac{3}{7} \frac{4}{7} \frac{5}{5} \frac{1}{5} \]
\[ + \frac{7}{7} = \]
\[ 03 \ 28 \ 30 \]

DISTANCE/SPEED:
768 Nautical = 883.79857 Statute
\[ \frac{7}{6} \frac{8}{8} \]
\[ \conv \ nt \ = st \]
\[ \frac{883.79857}{-} \]

174 mph = 151.20187 Knots
\[ \frac{1}{7} \frac{4}{4} \]
\[ \conv \ st \ = nt \]
\[ 151.20187 \]

TEMPERATURE:
21°F = -6.1111111°C
\[ \frac{2}{1} \]
\[ \conv \ °f \ = °c \]
\[ \frac{-6.111111}{-} \]

7°C = 49.4°F
\[ \frac{7}{7} \]
\[ \conv \ °c \ = °f \]
\[ 49.4 \]
BASIC AVIATION PROGRAM
OPERATING INSTRUCTIONS

STEP 1
Press the white program key that corresponds with the flight program you wish to solve. This will initiate the desired flight program and cause one of the data promters to light.

STEP 2
Press the necessary data keys to display the required data requested by the illuminated data prompter.

STEP 3
Press the enter [ENT] key. This will enter the data displayed and cause a different data prompter to light if additional data is required to complete the program.

Repeat steps 2 and 3 until no further data is requested by a data prompter and the answer is displayed.

NOTE: When both the display and the data prompters are lit at the same time, the computer is processing the problem. WAIT for a data prompter to light or your answer to display before doing anything further.

The four arithmetic functions (+, −, X, ÷) and the conversion functions may be used during any flight program while a data prompter light is on without affecting the program. The information displayed at the conclusion of these calculations may be entered by pressing the [ENT] button or may be cleared by pressing the [AC] button once before proceeding with the program.

AVIATION PROGRAM EXAMPLES

WEIGHT AND BALANCE

This example shows how to:

(A.) Load a sample aircraft using data in both "ARM" and "MOMENT" format.
(B.) Off-load baggage (or fuel burned).
(C.) Determine how far to move a known weight to achieve a desired C.G.
(D.) Determine how much weight to move a known distance to achieve a desired C.G.
(E.) Convert C.G. to MOM/100.
(F.) Convert MOM/100 to C.G.

When in the WT & BL program in the C.G. mode press [SHIFT] [WT] to initiate unknown weight shift program to move C.G. to desired location.

When in the WT & BL program in the C.G. mode press [SHIFT] [DIST] to initiate unknown distance shift program to move C.G. to desired location.

If you display wrong data you may correct your error prior to pressing the [ENT] key by pressing the [AC] key once. If you have already pressed the [ENT] key, complete the data set, and then off-load the incorrect data. If you cannot remember the incorrect data entered, you must clear the program by pressing the [AC] key twice. You may then restart the program either at the beginning or at any point that you know the current gross weight and balance.
What is the gross weight and C.G. of this aircraft loaded and ready for takeoff?

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>WT.</th>
<th>ARM</th>
<th>MOM/100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Aircraft empty wt.</td>
<td>4472</td>
<td></td>
<td>6715.1</td>
</tr>
<tr>
<td>2.</td>
<td>Oil 24 qts.</td>
<td>45</td>
<td></td>
<td>141.4</td>
</tr>
<tr>
<td>3.</td>
<td>Fuel main 100 gal.</td>
<td>600</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Fuel aux. 28 gal.</td>
<td></td>
<td>163</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Crew</td>
<td>310</td>
<td>119</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Passengers</td>
<td>275</td>
<td>178</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Baggage forward</td>
<td>77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Baggage aft</td>
<td>230</td>
<td>245</td>
<td></td>
</tr>
</tbody>
</table>

**PRESS SEE PRESS SET SEE**

(key) (data (switch) (display)

prompt)

Place mode switch in "MOM" position.

1. **WEIGHT** 4 4 7 2
   **MOM/100** 6 7 1 5 7 4 1
   **WEIGHT** 4472 6715.1

2. **WEIGHT** 4 5
   **MOM/100** 1 4 1 7 4
   **WEIGHT** 4517 6357

3. **WEIGHT** 6 0 0
   **MOM/100** 1 5 0
   **WEIGHT** 600 150

Place mode switch in "CG" position

**WEIGHT** 5 1 7 151.6

4. **WEIGHT** 2 8 X 6 =
   **ARM** 1 3 3
   **WEIGHT** 5285 151.9

5. **WEIGHT** 3 1 0
   **ARM** 1 1 9
   **WEIGHT** 5596 150.1

6. **WEIGHT** 2 7 5
   **ARM** 1 7 8
   **WEIGHT** 5870 151.4

7. **WEIGHT** 2 3 0
   **ARM** 2 4 5
   **WEIGHT** 6100 155.0

The gross weight is 6100 lbs. and the C.G. is 155.0 inches aft of datum. DO NOT CLEAR THE PROGRAM. What will the C.G. be if you remove 100 lbs. from baggage station 245?

**WEIGHT** 1 0 0 7
**ARM** 2 4 5
**WEIGHT** 6000 153.5

The gross weight now is 6000 lbs. and the C.G. is 153.5 in. aft of datum.
DISTANCE SHIFT
At a gross weight of 6000 lbs., and a C.G. of 153.5" you are aft of the C.G. envelope. How far forward would you move 130 lbs. of baggage from station 245 to place your C.G. at 151.57

\[
\begin{array}{c}
\text{WT} \times \text{BL} \\
\text{ENT} \quad \text{WEIGHT} 6000 \\
\text{ENT} \quad \text{CG} \quad 153.5 \\
\text{ENT} \quad \text{WEIGHT} 6000 \\
\text{SHIFT} \\
\text{ENT} \quad \text{CG} \quad 151.5 \\
\text{ENT} \quad \text{WEIGHT} 130 \\
\text{ENT} \quad \text{WEIGHT} 92.307692
\end{array}
\]

You would have to move the baggage forward 32" from station 245 to station 153. DO NOT CLEAR PROGRAM.

WEIGHT SHIFT
Assume that there is no room for baggage at station 153, but you do have forward storage at station 77. How much baggage would you have to move from station 245 to station 77 to place your C.G. at 151.5"? To recall your position in program press 0 [ENT] [ENT]

\[
\begin{array}{c}
\text{WT} \times \text{BL} \\
\text{ENT} \quad \text{WEIGHT} 6000 \\
\text{ENT} \quad \text{CG} \quad 151.5 \\
\text{ENT} \quad \text{WEIGHT} 130 \\
\text{SHIFT} \\
\text{ENT} \quad \text{CG} \quad 151.5 \\
\text{ENT} \quad \text{DIST} \quad 245 \: - \: 77 \quad 71.428571
\end{array}
\]

You would have to move 71 lbs. of baggage from station 245 to station 77.

CONVERT C.G. TO MOM/100
When weight & C.G. is displayed you can convert C.G. to MOM/100 by placing the mode switch in the "MOM" position [CG] [ENT] and press [0] [ENT] [ENT]

Example:

\[
\begin{array}{c}
\text{WT} \times \text{BL} \\
\text{ENT} \quad \text{WEIGHT} 6000 \\
\text{ENT} \quad \text{CG} \quad 151.5 \\
\text{ENT} \quad \text{WEIGHT} 6000 \\
\text{ENT} \quad \text{WEIGHT} 92.307692
\end{array}
\]

Move switch [CG] [MOM]

\[
\begin{array}{c}
\text{WT} \times \text{BL} \\
\text{ENT} \quad \text{WEIGHT} 6000 \\
\text{ENT} \quad \text{CG} \quad 151.5 \\
\text{ENT} \quad \text{WEIGHT} 6000 \\
\text{ENT} \quad \text{WEIGHT} 92.307692
\end{array}
\]

You would have to move 71 lbs. of baggage from station 245 to station 77.

DO NOT CLEAR PROGRAM.
CONVERT MOM/100 TO C.G.
Place the mode switch in the C.G. position and press and press

Example:

- WEIGHT
  Move switch
  \[ \text{CG MOM} \]

- WEIGHT \[ 0 \]

- ARM

- WEIGHT \[ 5900 \]

ESTIMATED GROUND SPEED AND HEADING:
What will be your ground speed and heading for a flight from Santa Fe, N.M. to Winslow, Ariz.?
True Air Speed 140 knots; Average Magnetic Course 247°;
Wind Direction 320°; Wind Velocity 30 knots;
Variation 13° East.

\[ \text{GS+HD} \]

- WIND DIR \[ 320 - 13 = 307 \]

- COURSE \[ 247 \]

- WIND VEL \[ 30 \]

- TRU AIR SPD \[ 140 \]

Your ground speed will be 123 knots and your heading 258°.

TIME ENROUTE:
What will your time enroute be from Santa Fe to Winslow?
Distance 231 n.m.;
Estimated Ground Speed 123 knots.

- DIST \[ 231 \]

- SPD \[ 123 \]

Your time enroute will be 1 hr. 52 min. 40 sec.

FUEL REQUIREMENTS:
How much fuel will you need?
Fuel Consumption Rate 15.8 g.p.h.;
Time enroute 1 hr. 52 min. 40 sec.

- RATE \[ 15.8 \]

- TIME \[ 740 \]

You will need a minimum of 29.7 gal. of fuel.

ENDURANCE:
How much endurance will you have?
Useable Fuel 48 gal.;
Fuel Flow Rate 15.8 g.p.h.

- FUEL \[ 48 \]

- RATE \[ 15.8 \]

You will have 3 hr. 2 min. 16 sec. of endurance.
RANGE:
How much range will you have?
Ground Speed 123 knots;
Endurance 3 hr. 2 min. 16 sec.

\[
\begin{array}{cccc}
\text{DIST} & \text{SPD} & 1 & 2 & 3 \\
\text{ENT} & \text{TIME} & 3 & 7 & 7 & 2 \\
\text{ENT} & 7 & 1 & 6 \\
\end{array}
\]

You will have a range of 373.8 n.m.

DENSITY ALTITUDE:
What is the density altitude at Santa Fe?
Pressure Altitude 6344 ft.;
Temperature 86°F.

\[
\begin{array}{cccc}
\text{ALT} & \text{PRES ALT} & 6 & 3 & 4 & 4 \\
\text{ENT} & \text{AIR TEMP} & 8 & 6 \\
\text{ENT} & \text{X} \\
\end{array}
\]

The density altitude is 6458 ft.

RATE OF CLIMB:
What must your rate of climb be to cross a Fix 6.7 n.m. from your take off area at an altitude of 6800 ft. MSL?
Ground speed 97 knots;
Airport elevation 6344 ft.

\[
\begin{array}{cccc}
\text{ROC} & \text{DIST} & 6 & 7 & 7 \\
\text{ENT} & \text{SPD} & 9 & 7 \\
\text{ENT} & \text{ALT CHG} & 8 & 8 & 0 & 0 \\
\text{ENT} & 6 & 3 & 4 & 4 \\
\end{array}
\]

Your rate of climb must be 592.6 ft. per min.

CONVERT FEET PER NAUTICAL MILE
TO FEET PER MINUTE:
What must your rate of climb be to clear an obstacle?
Climb Gradient 300 ft. per n.m.;
Ground Speed 97 knots.

\[
\begin{array}{cccc}
\text{ROC} & \text{DIST} & 6 & 3 & 4 & 4 \\
\text{ENT} & \text{SPD} & 9 & 7 \\
\text{ENT} & \text{ALT CHG} & 3 & 0 & 0 \\
\text{ENT} & \\
\end{array}
\]

Your rate of climb must be 485 ft. per min.

TIME TO CLIMB:
How long will it take to climb to altitude?
Cruise Altitude 12500 ft.;
Airport Elevation 6344 ft.;
Rate of Climb 650 ft. per min.

\[
\begin{array}{cccc}
\text{TIME} & \text{DIST} & 1 & 2 & 5 & 0 & 0 \\
\text{ENT} & \text{RATE} & 6 & 3 & 4 & 4 \\
\text{ENT} & \\
\end{array}
\]

It will take 9 min. 28 sec. to climb to 12500 ft.
(Note: Disregard last 2 digits because rate is ft. per min.)

GROUND SPEED:
What is your ground speed between checkpoints?
Distance 17 n.m.;
Elapsed Time 9 min. 26 sec.

\[
\begin{array}{cccc}
\text{SPD} & \text{DIST} & 1 & 7 \\
\text{ENT} & \text{TIME} & 7 & 7 & 9 & 2 & 6 \\
\text{ENT} & \\
\end{array}
\]

Your ground speed is 108.1 knots.
TRUE AIR SPEED:
What is your true air speed?
Pressure Altitude 12340 ft.;
True Air Temperature — 4°C;
Calibrated Air Speed 121 knots.

TAS
@ PRES ALT 1 2 3 4 0 12340

@ AIR TEMP C 4 7 2

@ CAL AIR SPD 1 2 1 121

ENT

Your true air speed is 148 knots.

CALIBRATED AIR SPEED:
What calibrated air speed should you fly to maintain a true air speed of 140 knots?
Pressure Altitude 12340 ft.;
True Air Temperature — 4°C.

CAS
@ PRES ALT 1 2 3 4 0 12340

@ AIR TEMP C 4 7 2

@ TRU AIR SPD 1 4 0 140

ENT

You should fly at 115 knots calibrated air speed.

UNKNOWN WIND:
What is the velocity and direction of the wind?
Magnetic Heading 258°; Magnetic Course 245°;
Ground Speed 108 knots; True Air Speed 140 knots.

WV=WD
@ HEADING 2 5 8 258

@ COURSE 2 4 5 245

@ SPD 1 0 8 108

@ TRU AIR SPD 1 4 0 140

ENT

The wind velocity is 42 knots from 293° magnetic.

FUEL CONSUMPTION RATE:
What is your fuel consumption rate?
Fuel Burned 20 gal.;
Time 1 hr. 10 min.

RATE
@ FUEL 2 0 20

@ TIME 1 7 7 1 0 1 10

ENT

Your fuel consumption rate is 17.1 gal. per hr.

DISTANCE TRAVELED:
How far have you traveled?
Ground Speed 108 knots;
Elapsed Time 1 hr. 10 min.

DIS
@ SPD 1 0 8 108

@ TIME 1 7 7 1 0 1 10

ENT

You have traveled 126.0 n.m.
DISTANCE TO DESCEND:
How far from your destination should you start your descent?
Cruise Altitude 12500 ft.;
Pattern Altitude 5839 ft.;
Rate of Descent 300 ft. per min.;
Ground Speed 145 knots.

```
  ROC → DIST  300  300
    ENT → SPD  145  145
    ENT → ALT CHG 12500  5938 = 6562.
    ENT
```

You should start your descent 52.9 n.m. from your destination.

FUEL CONSUMED:
How much fuel have you burned?
Fuel Consumption Rate 17.1 gal. per hr.;
Time Enroute 2 hr. 8 min. 20 sec.

```
  FUEL → RATE  17.1  17.1
  ENT → TIME 2748 20 08 20 36.6
  ENT
```

You will have consumed 36.6 gal. of fuel.

RNAV
(1701r and 1701tr only)

This program will tell you the distance and course between two waypoints addressed by the same VOR. This program uses four prompts with gold tides.

R1: Waypoint #1 Radial from VOR
D1: Waypoint #1 Distance from VOR
R2: Waypoint #2 Radial from VOR
D2: Waypoint #2 Distance from VOR

If you departed from Santa Fe (Waypoint #1) which is on the 030° Radial and 49 n.m. from ABQ, and your present position (Waypoint #2) is on the 275° Radial and 56 n.m. from ABQ, how far and what course have you flown?

```
  R   ENT → R2  275 275
  ENT → R1  30 30
  ENT → D1  49 49
  ENT → D2  56 56
  ENT  89 245
```

You have flown 89 n.m. on a course of 245°.
If your present position (Waypoint #1) is on the $084^\circ$ Radial and 54 n.m. from GUP, and your next Waypoint (#2) is on the $190^\circ$ Radial and 14 n.m. from GUP, how far and what course do you fly to your next waypoint?

You must fly 59 n.m. on a course of $251^\circ$ to your next waypoint.

By using the "RNAV" program and checking your ground speed you can then find "Unknown Wind". Once you know the wind velocity and direction, you can find a new heading to get on course by using the "RNAV" program and the "Ground Speed and Heading" program.

**TIMER OPERATING INSTRUCTIONS**

(1701t and 1701tr only)

The timer can be started, stopped, or reset ONLY while in the timer mode.

**TIMER KEYS**

- **CONV**
  - Press to access the timer mode or to return to the computer mode.
- **START**
  - Press to start the timer.
- **STOP**
  - Press to stop the timer.
- **RESET**
  - Press to reset the timer and to silence the alarm.
  (Will also silence the alarm while in the computer mode.)

To operate the timer as a count up timer display 00 00 00 and press .

To operate the timer as a count down alarm, display the amount of time you want to elapse before the alarm sounds and press . When the timer reaches 00 00 00 the alarm will sound, the display will begin to flash, and the timer will start counting up.

- **RESET**
- To silence the alarm press .
- To display time press HOURS $7\cdot7\cdot7$ MINUTES $7\cdot7$ SECONDS. (For example, to display 3 hours 21 minutes and 45 seconds press $3\cdot7\cdot7\cdot2\cdot1\cdot7\cdot4\cdot5$.)
You may stop and restart the timer as often as you wish without resetting and it will resume counting. You may also use all computer functions while the timer is counting. Press CONV and T/C to access the computer mode. The timer will continue counting. If it is counting down the alarm will sound when the timer reaches 00 00 00 even though the time is not being displayed. To silence the alarm press RESET.

You may return to the timer mode at any time while operating a flight program. To do this press CONV and ENT. The computer will retain the data entered to that point, and the data prompter will remain on until you return to the computer mode. If the time display is flashing when you return to the timer mode it is a reminder that the timer has counted down to 00 00 00 and is now counting up. To stop the flashing press RESET. The timer will continue counting until STOP is pressed.

IF YOU PLAN TO USE THE TIMER FOR MORE THAN 2 HOURS CONTINUOUSLY YOU SHOULD CONNECT THE NAVTROIC AIRCRAFT POWER CORD SUPPLIED WITH YOUR COMPUTER.

LIMITED ONE-YEAR WARRANTY

SPECIALIZED ELECTRONICS CORPORATION (SEC), 9629 IRVING PARK ROAD, SCHILLER PARK, IL 60176, warrants the navtronic FLIGHT COMPUTER for one full year from the date of purchase, against any defect in materials or workmanship not due to owner misuse or neglect or improper handling or shipment by the owner.

Should any such defect occur within the warranty period, SEC will repair or replace the defective FLIGHT COMPUTER, and return it without further cost to you, except for the cost of return postage, provided that the purchaser return the FLIGHT COMPUTER, COMPLETE WITH ALL ACCESSORIES, to SEC, postage prepaid.

THIS WARRANTY SHALL BE THE SOLE EXPRESS WARRANTY MADE BY SPECIALIZED ELECTRONICS CORPORATION WITH RESPECT TO THE navtronic FLIGHT COMPUTER.

ALL WARRANTIES IMPLIED BY LAW WITH RESPECT TO THE navtronic FLIGHT COMPUTER, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, SHALL BE LIMITED IN DURATION TO THE DURATION OF THIS EXPRESS WARRANTY.

THE REPAIR OR REPLACEMENT REMEDY DESCRIBED HERE-IN SHALL BE THE EXCLUSIVE REMEDY FOR BREACH OF WARRANTY WITH RESPECT TO THE navtronic FLIGHT COMPUTER. SPECIALIZED ELECTRONICS CORPORATION SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE navtronic FLIGHT COMPUTER.

Note: Some states do not allow limitations on how long an implied warranty lasts or allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

Should you require service on your navtronic pack your computer, aircraft power cord, A.C. charger and carrying case in a secure manner to prevent damage to parts. Return packed unit to:

SPECIALIZED ELECTRONICS CORPORATION
9629 IRVING PARK ROAD
SCHILLER PARK, IL 60176

DO NOT RETURN TO YOUR DEALER.