

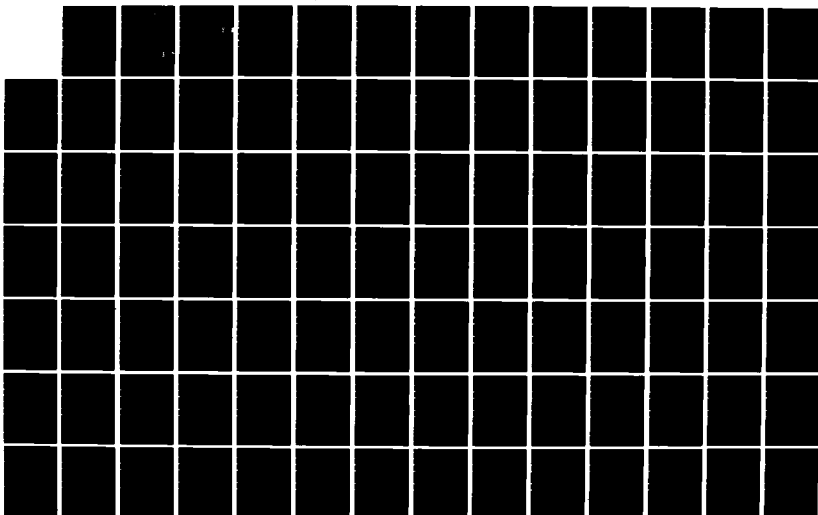
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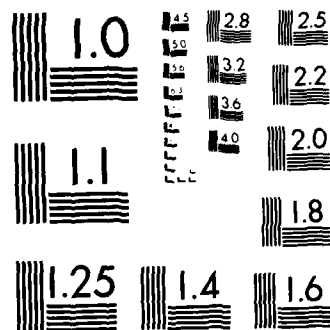
AVIONICS DATA BASE USERS MANUAL (U) APPLIED SYSTEMS INST 1/2
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US Department
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Federal Aviation
Administration

Avionics Data Base Users Manual

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Office of Aviation
Policy and Plans

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16. Abstract This manual describes the uses, structure, and operating procedures--including data retrieval, entry and special functions--for the Avionics Data Base. This data base provides detailed data for avionics currently available for both air carrier and general aviation aircraft. Specific information contained in the data base includes price, weight, dimensions, manufacture, manufacture's address and telephone number, Technical Standard Order (TSO) documentation, and ATA Specification 100 data. The Avionics Data Base was created using Microrim's R:Base Series 4000 Data Base Management System on the IBM Personal Computer. It contains three files or relations as they are referred to in this document. These relations are: <u>AVIONICS</u> - the relation that contains model specifications. <u>MANUFACT</u> - the relation that contains address and telephone number for the manufacturers. <u>TSOREF</u> - the relation that contains the Technical Standard Order (TSO) title, location, publication date and source document(s) for each TSO.			
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AVIONIC DATA BASE
USER'S MANUAL

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Preface

This document is submitted by Applied Systems Institute, Inc. (ASI) to satisfy the requirement to produce a User's Manual for the Avionic Data Base, developed for the Federal Aviation Administration (FAA), Office of Aviation Policy and Plans under contract number DTFA-81-83-Y-30629. The manual was written for the user to describe the Avionic Data Base and its structure and to explain how to use, modify and enter new data in the system.

1.0 GENERAL INFORMATION

1.1 Summary

This document introduces the reader to the Avionic Data Base. It describes the uses, provides information about the Database structure and explains operating procedures including data retrieval, entry and special functions.

The Avionic Data Base is a relational database created using Microrim's R:Base Series 4000 database management system on the IBM Personal Computer (PC). R:Base Series 4000 was used to develop the Avionic Data Base rather than produce new software programs from scratch, because it was already available to the FAA's Office of Aviation Policy and Plans, it is compatible with the IBM PC, and because of its simplicity and capability in performing the required analyses and new applications as they may arise. In conjunction with R:Base Series 4000, Microrim's Extended Report Writer was utilized to produce reports from the Avionic Data Base. In addition to its compatibility with the existing software, like R:Base Series 4000 it was selected because of its availability at the FAA.

The Avionic Data Base was designed to provide the FAA with an overview of current avionic production for general and commercial aviation, avionic manufacturers' addresses and Technical Standard Order (TSO) document information. The Avionic Data Base can be accessed easily by staff members with no previous data processing experience providing that the proper training is supplied. Reports are available which will provide a printed copy of the Avionic Data Base to those who lack immediate access.

1.2 Avionic Data Base Structure

The Avionic Data Base contains three files or relations as they will be referred to in this document. These relations are listed on the next page with a description of the type of information found in each.

2.3 AVIONIC DATA BASE EXECUTION

2.1 System Initialization

The Avionic Data Base is run on the IBM PC. In order to gain access to the database, the user must first turn on the power to start the operating system. Following a series of system checks the user will receive the operating system prompt C>. To initialize the Avionic Data Base, type AVIONICS after the prompt C> and press the return key <CR> (refer to the IBM PC Keyboard in Appendix B to help in locate this key):

C> AVIONICS <CR>

Following the initialization and greetings messages the Main Menu will fill the screen. For an example of the Main Menu, see Figure 1.

The Main Menu lists the actions that can be performed using the Avionic Data Base. The user will type the number (1-9) that corresponds to the action of his/her choice after the database prompt and press the return key <CR>.

Example:

Type the number corresponding to the action of your choice and press the return key :

~~~~~

A V I O N I C   D A T A   B A S E

\*\*        MAIN MENU        \*\*

~~~~~

Valid Actions are:

- (1) Retrieve data using a formatted screen layout
- (2) Retrieve data w/o formatted screen layout
- (3) Modify data using a formatted screen layout
- (4) Compute functional values for a selected attribute
- (5) Distribution of a selected attribute
- (6) Add new data to the Avionic Data Base
- (7) HELP for SORTED BY and WHERE clause
- (8) Database abbreviations & model indexing convention
- (9) End session

Type the number corresponding to the action of your choice and
press the return key :

Figure 1

For every action on the Main Menu, except action 9, providing the action is properly entered, the system will respond with the first prompt screen of a series of prompt screens. Depending on the selected action, this first prompt screen will allow the user to specify his/her course of execution. When this screen is referred to in this manual it will be described as the first or original prompt screen. Remember, the particular screen referenced depends on the action being discussed and it is the first or original prompt screen for that action.

Note: In order to successfully interact with the Avionic Data Base, it is important that the user:

- (1) Always wait for the prompt message before entering an action.
- (2) Obeys the prompt message to press the return key <CR> to enter the action.
- (3) Does not press the escape key [ESC] on the Main Menu.

Data Retrieval

The Main Menu provides two methods of data retrieval which are retrieval with or without a formatted screen layout or form as it will be referred to in this document.

4.2.1 Action 1: Retrieving Data Using a Form

Four forms are provided for retrieving data from the Avionic Data Base. Each form is designed to retrieve from a particular relation a set of attribute values or a row as it will be referred to in this document. The advantage of this is that a data entry can be viewed at one time with descriptive labels for the attribute values to make them familiar to the user. An example of such Avionic Data Base form is provided in Appendix C.

1. The following information was obtained from the records of the Bureau of the Census using a computer program for the purpose of this study:

CON

Click on the "Go to the first prompt screen for
this form" at the top of the first prompt screen see
Figure 1. Then click on the "View the form
specifications" button. The specifications
page will appear. The specifications corresponding to

- (1) General Descriptions
- (2) Forward Specifications

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

After you continue with the selected choice on this prompt screen and the other prompt screens of the Avionic Control Panel, the user will want to refer to the instructions in the following paragraphs. These instructions will be repeated throughout this document.

When the user attempts to enter a message which will not fit on the screen, he is prompted in order to continue. The screen layout is shown in Figure 2.

...and you can't get it any other way. Choose with your choice.

press the escape key [ESC] and follow the directions given in Section 2.2.1.

Example:

Choose (1 or 2) : 2 [ESC]

Once 'G' is pressed, a prompt screen that provides a command explanation and prompt lines for the command specifications will appear. An example of this screen is given in Figure 10.

The first prompt line of this screen allows for the output to be set to either the terminal or the printer.

Example:

Output - Choose (TERMINAL or PRINTER) : PRINTER CR

Next, the user should be specified if a printed copy is needed for future reference or the total length of all the attributes to be retrieved is greater than 80 characters which is the maximum allowed for terminal display. When using the printer, the total length of the attributes being retrieved can be between 1 and 255 characters.

The second specification to be made is the name of the relation from which the data will be retrieved.

Example:

Use relation (AVIONICS, MANUFACT or TSOREF) : AVIONICS CR

After the prompt line, the user must then specify the attributes to be retrieved from this relation.

PROMPTS

Relation MANUFACT contains manufacturer information for the manufacturers found in the relation AVIONICS. Listed below are the items which can be retrieved from the relation MANUFACT and to the right are the corresponding attribute name(s) and length(s) which are used for data inquiry.

ITEM	ATTRIBUTE(s)	LENGTH
Manufacturer Abbreviated Name.....	MFGR	20
Full Name of Manufacturer.....	FULMFGR	30
Manufacturer Division.....	DIVISION	35
Address.....	ADD1-ADD2	30 ea
City.....	CITY	20
State.....	STATE	3
Zip.....	ZIP	5
Country.....	COUNTRY	20
Telephone Number.....	PHONE	12

Press 'G' to return to original prompt screen or 'Q' for the Main Menu.

Figure 9

PROMPTS

Listed below are the three relations of the Avionic Data Base, AVIONICS, MANUFACT and TSOREF, along with a brief description of the contents of each.

- (1) AVIONICS - contains component/model specification data
- (2) MANUFACT - contains avionic manufacturer information
- (3) TSOREF - contains Technical Standard Order (TSO) information

To view a relation's contents and corresponding attribute names and lengths choose a relation (1, 2 or 3) :

Press escape key [ESC] and then 'G' for the next prompt screen.

Figure 8

Example:

Choose (1 or 2) : 1 [ESC]

The next screen that becomes available will list the three relations of the Avionic Data Base along with a summary of the contents of each, see Figure 8.

At this point, a description of a relation's contents including attribute names and lengths can be viewed by typing the number (1,2 or 3) corresponding to the relation of the user's choice.

Example:

To view a relation's contents and corresponding attribute names and lengths choose a relation (1, 2 or 3) : 2 [ESC]

Follow the message at the bottom of the screen to continue, and see Figure 9 for an example of the specified relation description.

The relation description provided in Figure 9 is helpful in forming the command. The user may wish to make note of the relation name, attribute names and lengths for the attributes to be retrieved or utilize the IBM PC print screen function (hold shift key down and press print screen key [PrtSc]) to send this information to the printer for a printed copy. Refer to Appendix B to locate these keys.

When finished with this screen press 'G' to return to the original prompt screen (Figure 7) or press 'Q' for the Main Menu.

2.2.2.2 Action 2: Choice 2 - Command Specifications

Choose number 2 from the first prompt screen (Figure 7) for data retrieval without a form. Type 2 on the prompt line,

PROMPTS

To retrieve data from the Avionic Data Base without the use of a formatted screen layout or form, you must specify the relation as well as the attribute(s) or item(s) to be retrieved. You may want to view relation descriptions and attributes or continue with the command specifications.

- (1) Relation Descriptions
- (2) Command Specifications

Choose (1 or 2) :

Press escape key [ESC] and then 'G' to continue with your choice.

Figure 7

S(kip),Q(uit):

Manufacturers Abbreviated Name : AERONETICS

Manufacturers Full Name : AERONETICS

Division (If Applicable) : AN AAR COMPANY

Street Address : 2100 TOUHY AVENUE
(Continued) :

City : ELK GROVE VILLAGE

State : IL

Zip : 60007

Country (Other than U.S.A) :

Telephone Number : 312/437-9300

Figure 6

data will appear on the screen with the first row of data retrieved from the database. Figure 6 is an example of form retrieval using the command specifications given in the previous chapter.

Note the two actions, S(kip) and Q(uit), located at the top of the example (Figure 6). These actions are always available to the user while viewing data retrieved with a form. Press the initial letter of the chosen action. To proceed to the next row retrieved using a form, press 'S' or return to the Main Menu if you wish, press 'Q'.

4.2.2 Action 2: Data Retrieval without a Form

Data retrieval without the use of a form allows the user to specify the relation's attributes to be viewed as opposed to viewing the attributes of a predefined form. The advantage to this type of retrieval is that the specified attributes are retrieved from several rows at a time unlike the form which retrieves one row at a time. Consequently, comparisons between attribute values can easily be made.

To retrieve data without a form choose action 2 from the Main Menu. Type 2 and press the return key <CR>:

2 <CR>

The system will respond with the first prompt screen that allows a choice to either view relation descriptions, which are necessary for making command specifications, or to continue with the command specifications. See Figure 7 for an example of this screen.

4.2.2.1 Action 2: Choice 1 - Relation Descriptions

To retrieve relation descriptions, type 1 on the first prompt screen (Figure 7), press the escape key [ESC] and follow the instruction at the bottom of the screen as previously discussed in section 4.1.1.

PROMPTS

Specify a form for retrieving data from the list below. SORTED BY and WHERE are optional command clauses. SORTED BY allows you to specify the attribute(s) to be sorted. The WHERE clause allows you to specify the condition(s) to be met. If both clauses are omitted, data will be retrieved from the Avionic Data Base in a random order.

Note: 1.) For attribute names or form descriptions, select "Form Descriptions" from the previous prompt screen.
2.) For a description of the SORTED BY or WHERE command clause, select HELP from the Main Menu.

Available forms are: AVIONIC1
 AVIONIC2
 MANUFACT
 TSOREF

Enter form name :
SORTED BY attribute(s):
WHERE condition(s) :

Press escape key [ESC] and then 'G' to execute command.

Figure 5

When finished with the form description the user can press 'G' to return to the original prompt screen (Figure 2) or 'M' to return to the Main Menu (Figure 1).

2.2.2.2 Select 2 - Define 2 - Command Specifications

Select 2 from the first prompt screen (Figure 2) for an explanation of the command and the prompt lines for the command specifications. Type 2 and press the escape key [ESC].

Example:

Choose (1 or 2) : 2 [ESC]

The screen shown given in Section 2.2.1 to continue to Figure 5 and the example of the next screen to appear. On this screen the data to be used for retrieval can be specified along with the SORTED BY and WHERE command clauses which are optional. Type 2 from the form and enter the clauses to the right of the colon as shown in the example below. Use the return key to move from one prompt line to another and from the last to the first prompt line.

Example:

Enter the name : MANUFACT
Enter the attribute(s): MFGR OR
Enter the filter(s) : STATE EQ IL [ESC]

The screen including an explanation and help in forming the SORTED BY and WHERE command clauses, is available by selecting 2 from the Main Menu. If the SORTED BY and WHERE clauses are not specified, all the data from the database will be retrieved and it will appear in random order.

When the command specifications are complete, the user will see a cursor at the bottom of the screen. Refer to Section 2.2.1 for Section 2.2.1. Press 'G' and the chosen

PROMPTS

The form AVIONIC1 retrieves data for the following items. Listed beside each item is its corresponding attribute name. Attribute names are used in the command clauses SORTED BY and WHERE.

ITEM	ATTRIBUTE
Index Number.....	INDEX
Component Name.....	COMPON
Manufacturer Abbreviated Name.....	MFGR
Model.....	MODEL
Price.....	PRICE
Federal Aviation Regulation (FAR).....	FAR
Technical Standard Order(s) (TSO).....	TSO
Warranty.....	WARR

Press 'G' to return to the original prompt screen or 'Q' for the Main Menu.

Figure 4

PROMPTS

listed below are the form names and descriptions of the type of data that each can retrieve.

- (1) AVIONIC1 - 1st of 2 forms which displays model data
- (2) AVIONIC2 - 2nd of 2 forms which displays model data
- (3) MANUFACT - a form which displays manufacturer address data
- (4) TSDREF - a form which displays TSO reference data

For specific form contents and corresponding attribute names, choose a form (1, 2, 3 or 4) :

Press escape key [ESC] and then 'G' for the next prompt screen.

Figure 3

2.2.1.1 Action 1: Choice 1 - Form Descriptions

To receive form descriptions, choose 1 from the first prompt screen (Figure 2). Type 1 on the prompt line, press the escape key [ESC] and use the directions given in the previous section to continue.

Example:

Choose (1 or 2) : 1 [ESC]

The next prompt screen which fills the screen will list the available forms along with a brief description of each. For an example of this screen, see Figure 3. The user is prompted to specify a form for which he/she wants to view the specific contents and attribute names. To do this, type the number (1, 2, 3 or 4) corresponding to the selected form and follow the message at the bottom of the screen.

Example:

**For specific form contents and corresponding attribute names,
choose a form (1, 2, 3 or 4) : 1 [ESC]**

As discussed in Section 2.2.1, the action line becomes available at the top of the screen when the escape key [ESC] is pressed. Use the directions given in Section 2.2.1 to proceed with the action of your choice.

If 'G' is pressed, the selected form description will fill the screen listing the items which are displayed by that particular form along with the corresponding attribute names which are used in the command clauses SORTED BY and WHERE. An example of a form description is provided in Figure 4.

This message requires a little attention because once the escape key (ESC) is pressed, the action line is the following example text available at the top of the screen.

Example:

E(edit),R (relation list),A(ttribute list),G(o),Q(uit):

This action line provides the user with a choice of several responses. These responses are described below in the order in which they appear in the action line:

- E : Edit Edit the entry line of the prompt screen.
- R : (Relation list) List the relations of the Avionic Data Base.
- A : (Attribute list) List the attributes defined for a specified relation.
- G : (Go) Proceed to the next prompt text or execute the command.
- Q : (Quit) Return to the Main Menu.

The user may press 'G' to continue as suggested by the text at the bottom of the screen, 'Q' to quit and return to the Main Menu, or 'E' to edit.

If 'E' is pressed, the system cursor will return to the prompt line where the current entry can be changed by typing a new value over the old. As a general rule, the return key is used to move from one line to another and from the last to the first line if more than one prompt lines exists. Again, the user will follow the directions at the bottom of the screen when prompted to do so.

The responses R (relation list) and A (attribute list) are not available here.

PROMPTS:

Formatted screen layouts or forms are available for retrieval of data from the Avionic Data Base. The criterion for selecting a form for data retrieval is the type of data to be retrieved. You may want to view form descriptions and attributes or continue with the command specifications.

- (1) Form Descriptions
- (2) Command Specifications

Choose (1 or 2) :

Press escape key [ESC] and then 'G' to continue with your choice.

Figure 2

PROMPTS

Specify the relation and the attribute(s) you want to see. Remember when you specify attributes that the screen width will limit the number of attributes to be viewed at one time. If output is set to PRINTER, the total width of attributes to be retrieved can be 132. To change the width of an attribute column, add =n to the attribute name, where n is a number between 1 and 80. SORTED BY and WHERE are optional command clauses. SORTED BY allows you to specify the attributes to be sorted. The WHERE clause allows you to specify the condition(s) to be met.

Note: 1.) For attribute names and lengths or relation descriptions, select "Relation Descriptions" from previous prompt screen.
2.) For a description of the SORTED BY or WHERE command clause, select HELP from the Main Menu.

Set Output - Choose (TERMINAL or PRINTER) :
Choose relation (AVIONICS, MANUFACT or TSOREF) :
Attribute name(s) :
SORTED BY attribute(s) :
WHERE condition(s) :

Press escape key [ESC] and then 'G' to execute command.

Figure 10

Example:

Attribute name(s) : INDEX COMPON MFGR MODEL <CR>

Finally, the two remaining prompt lines, the SORTED BY and WHERE command clauses, are optional and can be completed at the users discretion.

Example:

SORTED BY attribute(s) : INDEX <CR>
WHERE condition(s) : COMPON EQ ELT [ESC]

On-line assistance for an explanation and aid in forming these two clauses is available by selecting action 7 from the Main Menu. If both entries are omitted, all the data from the relation for the selected attributes will be retrieved in a random order.

Should help be needed with the relation or attribute names when completing command specifications, the user must refer to "Relation Descriptions" provided from the first prompt screen (Figure 7).

When the command specifications are completed, use the directions given in Section 2.2.1 to execute the command or return to the Main Menu. Figure 11 is an example of the data retrieved using the command specifications shown in the above examples.

2.3 Action 3: Modify Data Using Forms

The Avionic Data Base may need to be modified with model price increases, manufacturer address changes and in general with updated information from the manufacturers. The forms which were used to retrieve data are also used to make modifications to the database. (See the forms provided in Appendix C.)

INDEX	COMPON	MFGR	MODEL
23001088	ELT	EMERGENCY BEACON	EBC 302-H
23001089	ELT	ELT'S UNLIMITED	DEFT-1
23001122	ELT	MARTECH	CIR-11-7
23001123	ELT	MARTECH	EB-2BS MARLIN
23001124	ELT	MARTECH	EAGLE
23001125	ELT	MARTECH	EB-2BW DOLPHIN
23001167	ELT	NARCO	ELT 10
23001180	ELT	EMERGENCY BEACON	EBC 302-V
23001181	ELT	EMERGENCY BEACON	EBC 302
23001182	ELT	EMERGENCY BEACON	EBC 302-VR
23001183	ELT	EMERGENCY BEACON	EBC 102A
23001382	ELT	POINTER	MODEL 3000
23001388	ELT	GARRETT	RESCU. 99
23001406	ELT	MERL	79007-P
23001407	ELT	MERL	79007-AP
23001408	ELT	MERL	79007-AF

Figure 11

To perform modifications the user will choose action 3 from the Main Menu. Type 3 and press the return key <CR>:

3 <CR>

The screen will clear and the user is prompted to type the password and press the return key <CR>.

Example:

Type Password for modification and press return key : XXXX <CR>

The password allows access to the edit and delete functions, which must be performed with care.

If the correct password is entered, a prompt screen will appear which provides a choice to either view form descriptions or continue with the command specifications, see Figure 12. The user will type the number corresponding to his/her choice and follow the directions provided in Section 2.2.1.

If an incorrect password is entered, the screen will clear and a message reflecting such will appear with a prompt to press the return key <CR> to proceed to the Main Menu.

2.3.1 Action 3: Choice 1 - Form Descriptions

To view form descriptions, type 1 on the first prompt screen (Figure 12) and press the escape key [ESC].

Example:

Choose (1 or 2) : 1 [ESC]

Press 'G' to continue to the next prompt screen which lists the four forms of the Azlonic Data Base along with a brief summary of the data that each can modify. For an example of this screen,

PROMPTS

Formatted screen layouts or forms are available for modifying data from the Avionic Data Base. The criterion for selecting a form for data modification is the data to be modified. You may want to view form descriptions and attributes or continue with the command specifications.

- (1) Form Descriptions
- (2) Command Specifications

Choose (1 or 2) :

Press escape key [ESC] and then 'G' to continue with your choice.

Figure 12

see Figure 13. The user is prompted to select a form to view the contents and corresponding attribute names. Type the number (1, 2, 3 or 4) for the form needed and proceed as directed in Section 2.2.1.

Example:

To view form contents and corresponding attributes
choose (1, 2, 3 or 4) : 4 [ESC]

An example of the form description received when the user presses 'G' to continue can be seen in Figure 14. When viewing a form description the user may want to note the relation name and the attributes which can be used in the SORTED BY and WHERE command clauses or use the print screen function (hold shift key down and press print screen key [PrtSc]) to send copy to printer. Refer to Appendix B for help in locating these keys.

When finished with the form description, press 'G', as prompted by the message at the bottom of the screen, to return to the original prompt screen (Figure 12) or 'Q' to return to the Main Menu.

2.3.2 Action 3: Choice 2 - Command Specifications

To modify data from the Avionic Data Base using a form, type 2 on the first prompt screen (Figure 12) and follow the directions in Section 2.2.1.

Example:

Choose (1 or 2) : 2 [ESC]

The next prompt screen which appears allows the command specifications to be made, see Figure 15. The first prompt line

PROMPTS

Listed below are the form names and descriptions of the type of data that each can modify.

- (1) AVIONIC1 - 1st of 2 forms for modifying component/model data
- (2) AVIONIC2 - 2nd of 2 forms for modifying component/model data
- (3) MANUFACT - form for modifying manufacturer address data
- (4) TSOREF - form for modifying TSO reference data

To view form contents and corresponding attributes
choose (1, 2, 3 or 4) :

Press escape key [ESC] and then 'G' for the next prompt screen.

Figure 13

PROMPTS

The form ISOR25 contains the following items for modifications. Listed beside each item is its corresponding attribute name(s). Attribute names are used in the command clauses SORTED BY and WHERE.

FORM	ATTRIBUTE(s)
Technical Standard Order (TSO) Number.....	TSO NO
TSO Title	TSOTITL1-TSOTITL2
TSO Location.....	LOC
TSO Publication Year or Date.....	YRDATE
Source Standard(s).....	SOURCE1-SOURCE2
Sort Number.....	SORTNUM

Press 'G' to return to the original prompt screen.

Figure 14

```

***** PROMPT *****
Specify a form for modifying data from the list below.  SORTED BY and
WHERE are optional command clauses.  SORTED BY allows you to specify
the attribute(s) to be sorted.  The WHERE clause allows you to specify
the condition(s) to be met.  If both clauses are omitted, data to be
modified will appear in a random order.
1. For attribute name(s) or form description(s), select "Form
   Descriptions" from the previous prompt screen.
2. For a description of the SORTED BY or WHERE clause
   clause, select HELP from the Main Menu.

Available forms are:  AVIONIC1
                     AVIONIC2
                     MANOPAC1
                     TSDREF

Enter form name      :
Enter SORTED BY attribute(s):
Enter WHERE condition(s) :

Press the space key (SPACE) and the 'GO' to execute the command.
*****

```

Figure 15

requests that the user type the name of the form to be used for data modification.

Example:

Enter form name : TSOREF

Following the prompt lines, user specifies the SORTED BY and WIDTH values, respectively, or optional.

Example:

Enter sort order : SORTNUM
Enter width : TSONO EG C4C (EAC)

Following the previously, assistance for the two command lines is provided by selecting action 7 from the Main Menu. If SORTED BY and WIDTH are omitted, the data to be retrieved will be in random order.

Following the command specifications, press the function key F7 and the action line will appear at the top of the form. Press 'E' to execute the command or 'Q' to return to the menu.

Following the action to continue, the form selected will be displayed with the first row of data to be modified. The following is an example of the first row retrieved for the command specifications shown in the above example. The action line is located at the top of the form.

Example:

(Change entry), Add entry, R(eset), S(kip), E(dit), D(elete), Q(uit):

C(hange entry),A(dd entry),R(eset),S(kip),E(dit),D(elete),Q(uit):

Sort Number : 004

TSO Number : C4c

TSO Title : BANK & PITCH INSTRUMENTS
(continued)

TSO Location : FAR PART 514.14

Publication Date : 1960

Source Standard(s) : SAE

Figure 16

Table 3.1.1 provides the user with a listing of the following actions:

- C : (Change Entry) Updates the database with the changes made and the next row is displayed on the form.
- A : (Add) Not applicable here. This is used to add a new row.
- R : (Reset) Ignores any changes made to the row and returns the original data values.
- S : (Skip) Skips to the next row when the user does not wish to edit the current row displayed.
- E : (Edit) Allows the current row to be edited.
- D : (Delete) Deletes the row currently being displayed.
- Q : (Quit) Displays the number of rows changed, added, deleted and returns the user to the Main Menu.

When the user selects edit, this will enable the user to move to the current row using the return key. Changes can be made to the current entry and utilizing the insert key located on the right side of the keyboard. Use the left and right arrow keys which are also located to the right of the cursor on the text of the prompt line. See Appendix 3 for a listing of these keys.

When modification of the entry is complete, press the escape key which is prompted by the message at the top of the screen. This will move the action line into view again, thus replacing the entry with a new one. At this point, the user must press 'C' to update the database. Subsequently, the next row will be displayed. If this step be omitted, any modifications made will not be permanent. If the user intends to quit the program, a prompt for a character 'Q' in order to return to the main menu is the last.

If the user selects skip, the prompt is provided 'C', the user must press the update key 'C' in order for the 'R' to go to the next row.

Example:

- 33 -

PROMPTS

Functional values such as count, minimum, maximum, average and sum can be calculated for an attribute. You may want to view available attributes according to the relation in which they belong or continue with the command specifications.

- (1) Relations and Attributes
- (2) Command Specifications

Choice: 1

Press or any key [F80] and then 'G' for the next prompt screen.

Page 17

PROMPTS

For the distribution of an attribute, specify the attribute and the relation name to which the attribute belongs. The WHERE clause which allows you to specify the condition(s) to be satisfied is optional.

- Notes: 1.) For relations and attribute names, select "Relation : Attributes" from the previous prompt screen.
2.) For a description of the WHERE command, select HELP from the Main Menu.

Attribute name :
Relation name to which the attribute belongs :
WHERE condition(s) :

Press escape key [ESC] and then 'G' to execute the command or 'U' to return to the Main Menu.

Example:

Choose (1 or 2) : 2 [ESC]

Figure 28 is an example of the next screen to appear. The first command specification to be made on this prompt screen is the attribute name for which distribution is to be calculated.

Example:

Attribute name : COMPON (CR)

Next, specify the relation to which the attribute belongs.

Example:

Relation name to which the attribute belongs : AVIONICS (CR)

Finally, the last prompt line, which is optional, is for entering the WHERE condition(s). Refer to action 7 of the Main Menu for an explanation and assistance with forming this command clause. Type the condition or conditions on the prompt line.

Example:

WHERE condition(s) : MFGR EQ SPERRY [ESC]

To execute the command follow the instructions located at the bottom of the prompt screen (refer to Section 2.2.1). Figure 29 is an example of the distribution for the command specifications given in the previous examples.

PROMPTS

Listed below are the contents of Relation AVIONICS.

ITEM	ATTRIBUTE
Index Number.....	INDEX
Component Name.....	COMPON
Manufacturer Abbreviated Name.....	MFGR
Model.....	MODEL
Price.....	PRICE
Federal Aviation Regulation (FAR).....	FAR
Technical Standard Order(s) (TSO).....	TSO
Warranty.....	WARR
Input.....	INPUT
Altitude Range(s).....	ALTR1-ALTR4
Unit Name, Wt, H/W/D & Price.....	BREAK1-BREAK5
Remarks.....	REMARK1-REMARK5
As of Date.....	ASOFDATE

Press 'G' to return to the original prompt screen or 'Q' for the Main Menu.

Figure 27

PROMPTS

Listed below are the three relations of the Avionic Data Base. For a list of a relation's attributes, specify the number corresponding to the relation of your choice.

Available relations: (1) AVIONICS
 (2) MANUFACT
 (3) TSOREF

Choose (1, 2 or 3) :

Press escape key [ESC] and then 'G' to continue with your choice.

Figure 26

To view relations and attributes the user will type 1 on the prompt line of the first prompt screen (Figure 25), press the escape key [ESC] and follow the directions given in Section 2.2.1.

Example:

Choose (1 or 2) : 1 [ESC]

Figure 26 is an example of the next screen to appear. It will prompt the user to select the relation from which he/she would like to view the attributes. Type the number (1, 2, or 3) corresponding to the relation chosen and follow the directions at the bottom of the screen.

Example:

Available relations: (1) AVIONICS
 (2) MANUFACT
 (3) TSOREF

Choose (1, 2 or 3) : 1 [ESC]

The next screen will list the contents of the specified relation. The contents from the relation specified in the previous example are shown in Figure 27. Press 'G' as suggested by the message at the bottom of the screen and the original prompt screen (Figure 25) will return.

2.5.2 Action 5: Choice 2 - Command Specification

Attribute name and relation, and optionally the WHERE condition(s) need to be specified to receive distribution for an attribute. To make such command specifications the user will type 2 on the prompt line of the original prompt screen (Figure 25) and follow the directions given at the bottom of the screen.

PROMPTS

The distribution including each unique value and the number of times that value occurs can be calculated for a specified attribute. You may want to view relations and attributes or continue with the command specifications.

- (1) Relations and Attributes
- (2) Command Specifications

Choose (1 or 2) :

Press escape key [ESC] and then 'G' to continue with your choice.

Figure 25

PRICE Count = 15 Minimum = \$875.00
 Minimum = \$9,360.00
 Sum = \$54,246.00 Average = \$3,616.40
 Count = 546
 Press return key for the Main Menu.

Figure 22

PRICE Minimum = \$495.00
 Press return key for the Main Menu.

Figure 23

PROMPTS

Specify the value you want to calculate, the attribute and the relation to which the attribute belongs. The WHERE clause which is used to specify the condition(s) to be satisfied is optional.

Note: 1.) For relations and attribute names, select "Relations and Attributes" from the original prompt screen.
 2.) For a description of the WHERE clause, select HELP from the Main Menu.

Choose a functional value (COUNT, MIN, MAX, AVE, SUM or ALL) : MIN
 Attribute name : PRICE
 Relation name to which attribute belongs : AVIONICS
 WHERE condition(s) : COMPON CONTAINS ALTIMETER

Press escape key [ESC] and then 'G' to execute the command or 'Q' to return to Main Menu.

Figure 24

and assistance in forming this command clause. If omitted the functional value calculated will be inclusive of all the data in the specified relation.

Example:

WHERE condition(s) : COMPON CONTAINS ALTIMETER [ESC]

Press the escape key [ESC] upon completion of the command specifications and then 'G' to execute the command. Figure 22 is an example of the output from the execution of the command specifications given in the previous examples. Note that ALL calculates more than one value and these values will wrap from one line to another. The output for the other functional values will look similar to the example shown in Figure 23 given the specifications used on the sample prompt screen in Figure 24. In both cases, the message located at the end of the output, prompts the user to press the return key <CR> to return to the Main Menu.

2.5 Action 5: Distribution of a Selected Attribute

Distribution which includes each unique value and the number of times that value occurs, can be calculated for a specified attribute. To do this, choose action 5 from the Main Menu. Type 5 and press the return key <CR>:

5 <CR>

The prompt screen which appears, provides a choice to either view relations and attributes or continue with the command specifications. Figure 25 is an example of this first prompt screen.

2.5.1 Action 5: Choice 1 - Relations and Attributes

The user must be familiar with the relations and their attributes to complete the distribution command specifications.

PROMPTS

Specify the value you want to calculate, the attribute and the relation to which the attribute belongs. The WHERE clause which is used to specify the condition(s) to be satisfied is optional.

Note: 1.) For relations and attribute names, select "Relations and Attributes" from the original prompt screen.
2.) For a description of the WHERE clause, select HELP from the Main Menu.

Choose a functional value (COUNT, MIN, MAX, AVE, SUM or ALL) :
Attribute name :
Relation name to which attribute belongs :
WHERE condition(s) :

Press escape key [ESC] and then 'G' to execute the command or 'Q' to return to Main Menu.

Figure 21

PROMPTS

The following is a list of the functional values that can be calculated for the selected attribute.

COUNT	-	the total number of occurrences for the attribute
MIN	-	the minimum valued attribute
MAX	-	the maximum valued attribute
AVE	-	the average of the attribute
SUM	-	the sum of the attribute
ALL	-	all the above values

Note: Values AVE, SUM and ALL can only be used with attribute PRICE found in the relation AVIONICS

Press 'G' to continue.

Figure 20

The prompt screen to appear lists the functional values that can be computed along with a brief explanation of each. For an example, see Figure 20. Follow the message at the bottom of the screen and press 'G' for the next screen on which the command specifications are made, see Figure 21.

The first prompt line from this screen is for specifying a functional value to be calculated.

Example:

Choose a functional value (COUNT, MIN, MAX, AVE, SUM or ALL) : ALL

Remember that functional values AVE, SUM and ALL can only be used with attribute PRICE of relation AVIONICS.

On the next prompt line enter the attribute name for which the functional value is to be calculated.

Example:

Attribute name : PRICE CR

The third command specification to be made is the relation to which this attribute belongs.

Example:

Relation name to which attribute belongs : AVIONICS

The user may have to refer to "Relations and Attributes" from the original prompt screen (Figure 17) to determine the attribute and relation to be used in this command.

The final specification, which is optional, is the WHERE clause. Select action 7 from the Main Menu for an explanation

PROMPTS

isted below are the contents of Relation MANUFACT.

ITEM	ATTRIBUTE(s)
Manufacturer Abbreviated Name.....	MFG
Full Name of Manufacturer.....	FULMFG
Manufacturer Division.....	DIVISION
Address.....	ADD1-ADD2
City.....	CITY
State.....	STATE
Zip.....	ZIP
Country.....	COUNTRY
Telephone Number.....	PHONE

ress 'G' to return to the original prompt screen or 'Q' for the Main Menu.

Figure 19

PROMPTS

In order to calculate functional values the user must choose an attribute and specify the relation to which the attribute belongs. Listed below are the three relations of the Avionic Data Base. For a list of a relation's attributes, specify the number corresponding to the relation of your choice.

Available relations: (1) AVIONICS
 (2) MANUFACT
 (3) TSOREF

Choose (1, 2 or 3) :

Press escape key [ESC] and then 'G' to continue with your choice

Figure 18

a prompt screen which can assist in the selection of this attribute. Type 1 and press the escape key [ESC].

Example:

Choose (1 or 2) : 1 [ESC]

The action line will then be seen at the top of the screen and the user will press 'G' to continue.

The next prompt screen to fill the screen allows the user to select the relation (1,2 or 3) for which he/she wants to view attributes. For an example, of this prompt screen see Figure 18. Type the number corresponding to the relation of your choice.

Example:

Choose (1, 2 or 3) : 2 [ESC]

Follow the directions in Section 2.2.1 to receive the next screen as specified in the previous example, see Figure 19. When finished viewing the relation's attributes, press 'G' to return to the original prompt screen (Figure 17) or 'Q' to return to Main Menu when done with this screen.

2.4.2 Action 4: Choice 2 - Command Specifications

Type 2 on the prompt line of the first prompt screen (Figure 17) and follow the message at the bottom of the screen to continue with the command specifications.

Example:

Choose (1 or 2) : 2 [ESC]

COMPON	Number of Occurrences
AIR DATA SYSTEM	1
ALTIMETER - RADIO	1
AUTOPILOT	2
COMPASS SYSTEM	1
EFIS	2
FLIGHT DIRECTOR	1
FLUX VALVE	1
GYRO - DIRECTIONAL	1
GYRO - VERTICAL	1
INDICATOR - ADI	3
INDICATOR - HSI	3
INDICATOR - NAV	2
INTEG FLIGHT CONTROL	1
MLS	1
WEATHER RADAR	11

Press return key for the Main Menu.

Figure 29

2.6 Action 6: Add New Data to the Avionic Data Base

The Avionic Data Base will need to be updated with new data pertaining to avionic production, manufacturers and TSOs. The forms given in Appendix C are provided for this purpose. New data is entered using the form which corresponds to the relation in which the new data is to be added.

To enter new data, select action 6 from the Main Menu. Type 6 and press the return key <CR>:

6 <CR>

The screen will clear and the system will prompt the user to enter the password for data entry. Type the password and press return key <CR>.

Example:

Enter the Password for data entry and press return key : XXXX

If the password is invalid, a message reflecting such will appear on the screen and the user is prompted to press the return key <CR> to return to the Main Menu. Otherwise, a prompt screen becomes available which allows the user to specify the relation to which the data is to be added. See Figure 3D for an example of this screen. Type the number corresponding to the relation in which the data is to be added and press the return key <CR>.

Example:

- (1) AVIONICS
- (2) MANUFACT
- (3) TSOREF

Type the number corresponding to the relation and
press return key : 3 <CR>

Choose the relation in which you want to add data.

- (1) AVIONICS
- (2) MANUFACT
- (3) TSOREF

Type the number corresponding to the relation and
press return key :

Figure 30

A blank form, such as that found in Figure 31 will fill the screen when the return key is pressed in the previous example. The cursor will be positioned at the first prompt line to be completed. Using the return key <CR>, the user is free to move through the form and fill in the prompt lines accordingly. Remember, it is not necessary to fill in all the prompt lines of the form. The system will assign a null value (-0-) to all the lines left blank.

A message located at the top of the screen prompts the user to press the escape key [ESC] when data entry is complete, and the following action line will replace the message.

Example:

A(add this data).R(reuse data after adding).E(edit).Q(quit):

The user has a choice of four actions provided by the action line:

- A : (Add) Add the data entered on the form and a new blank form will appear for the next entry.
- R : (Reuse data after adding) Add the data entered on the form and the data will be retained on the screen to be used again for the next entry.
- E : (Edit) Modify the data entered on the form.
- Q : (Quit) Return to the Main Menu.

Press 'A' to add the new data to the Avionic Data Base. When data entry is complete, the user will press 'Q' to return to the Main Menu. It is important to note that any data appearing on the screen when 'Q' is pressed will not be added to the database. Therefore, if the data being displayed is to be added, it is necessary to press 'A' first and when the blank form appears, press the escape key [ESC] and then 'Q' to return to the Main Menu.

Sort Number :

TSO Number :

TSO Title :
(continued)

TSO Location :

Publication Date :

Source Standard(s) :

Figure 31

2.6.1 Adding New Data to Relation AVIONICS

Relation AVIONICS, unlike the other two relations, requires two forms to be completed for data entry. Once the first form is completed, see Figure 32, press 'A' to add the data and the screen will remain blank for a few seconds before the second form appears, see Figure 33. The key items or identifiers, i.e., index, model number, component name and manufacturer, will be listed at the top of the form as entered on the first form. Complete the desired lines of this form including the "Date of Entry" which must be specified for each entry. When data entry is finished, press the escape key [ESC] as prompted by the message at the top of the screen and this message will be replaced with the action line seen below.

Example:

Valid actions are 'C', 'E', 'R' and 'Q'. Refer to Section 2.3.2 for an explanation of these actions.

The user must press 'C' to assign the data entered on the second form to the row of data entered on the first form. Once again, remember that any data on the screen when 'Q' is pressed will be lost.

When 'C' or 'Q' is pressed, the screen will clear and a status message like that discussed previously will appear followed by a prompt to continue. Respond to the prompt by typing either 'Y' to continue entering data into relation AVIATIONIS or 'N' to return to the Main Menu. Press the return key (CR) to proceed with the selected response.

Index : 99999999
Component Name : NAV RECEIVER
Manufacturer : AERONETICS
Model Number : NR-889
Price : \$2500
FAR : 91
TSD :
Warranty : 1 YR

Figure 32

Index : 99999999
Model : NR-889

Component Name : NAV RECEIVER
Manufacturer : AERONETICS

Altitude Range :
:
:
:

Input :

Dist. Weight. H W/D & Price :
:
:
:
:

Remarks :
:
:
:
:
:

Date of Entry (MM/YY) :

Figure 33

Example:

1 row(s) were changed
0 row(s) were deleted
0 row(s) were added

Do you wish to continue data entry??
Type (Y or N) and press the return key : Y <CR>

2.7 Action 7 : HELP for SORTED BY and WHERE Command Clauses

SORTED BY and WHERE are two command clauses which are specified in the various prompt screens of the Avionic Data Base. Online assistance, including a command description and assistance in forming the command clauses, is provided by selecting action 7 from the Main Menu. Type 7 and press the return key <CR>:

7 <CR>

Figure 34 is an example of the next prompt screen to appear which allows the user to type the number corresponding to the command for which help is needed. Follow the message at the bottom of the screen to continue with the requested command description. (Refer to the directions given in Section 2.2.1.)

2.7.1 Action 7: HELP - SORTED BY

The SORTED BY command clause allows the user to specify the attribute(s) for sorting. Select choice 1 from the first prompt screen (Figure 34) for help with this clause. Type 1 and press the escape key [ESC].

Example:

Choose (1 or 2) : 1 [ESC]

PROMPTS

HELP provides a description and syntax for the SORTED BY and WHERE command clause.

- (1) SORTED BY
- (2) WHERE

Choose (1 or 2) :

Press escape key [ESC] and then 'G' for requested description.

Figure 34

Follow the directions in Section 2.2.1 to proceed to the next screen which explains the SORTED BY clause, how it is used and the syntax as given below. See Figure 35 for an example of this HELP screen.

Example:

SORTED BY mfgr compon

On a prompt line the user only needs to specify the attribute(s) to be sorted, leaving a blank space between each. In the above example, the specified attributes are shown in lower case and underlined to distinguish the entry from the given portion of the command.

The Avionic Data Base performs sorting in ascending order unless descending order is specified by entering =D after the attribute name.

Example:

SORTED BY price=D

If assistance is needed with the attribute names to be specified in the SORTED BY clause the user can refer to the form or relation description provided under the current action or Appendix A of this manual which lists the attributes of each relation.

When finished with this HELP screen, press 'G' to return to the previous prompt screen (Figure 34) or 'Q' for the Main Menu.

2.7.2 Action 7: HELP - WHERE

The WHERE command clause is used to specify the condition(s) to be satisfied, thus qualifying or restricting a

PROMPTS

The SORTED BY clause is used to specify the attribute(s) for sorting.
The syntax for the SORTED BY clause is:

SORTED BY attribute1 attribute2 ...

Up to ten attributes may be specified, in which case sorting is done
in the order that the attribute names are listed. Sorting is done in
the ascending order unless descending order is specified with =D
following the attribute name, i.e., attribute1=D.

Examples of the SORTED BY clause:

SORTED BY mfgn
SORTED BY index compon
SORTED BY price=D

Note: Only the attribute names need to be specified when using a
prompt screen.

Press 'G' to return to the previous screen or 'Q' for the Main Menu.

Figure 35

command. For help with this clause select choice 2 from the first prompt screen (Figure 34). Type 2 and press the escape key [ESC].

Example:

Choose (1 or 2) : 2 [ESC]

Press 'G' to continue to the next screen which provides a description of the WHERE command clause and the syntax as seen in the example below. See Figure 36 for an example of this screen.

Example:

WHERE condition1 [AND/OR] condition 2

A condition is a statement which compares an attribute to a value or checks for the existence of an attribute. The valid conditions and operators are listed below. The operators are in bold print so that they may be easily recognized. The substitute symbol and function, if applicable, is shown to the right.

Valid Conditions

attribute **EXISTS**
attribute **FAILS**
attribute **EQ** value
attribute **NE** value
attribute **GT** value
attribute **GE** value
attribute **LT** value
attribute **LE** value
attribute **CONTAINS** value

Substitute Symbol & Function

= equals
<> not equals
> greater than
>= greater than or equal to
< less than
<= less than or equal to

Up to 10 conditions can be specified using the operators AND and OR.

PROMPTS

The WHERE clause is used to specify the condition(s) to be satisfied thus qualifying or restricting a command. A condition is an expression comparing an attribute to a value. The syntax for the WHERE clause is:

WHERE condition1 [AND/OR] condition2 ...

Up to 10 conditions may be specified in a WHERE clause using the operators AND and OR. Condition operators are listed below along with their substitute symbol and respective function.

Operator	or	Symbol	Function
EO		=	equals
NE		()	not equals
GT		>	greater than
GE		>=	greater than or equal
LT		<	less than
LE		<=	less than or equal

Press 'G' for valid conditions and examples.

Figure 36

All the reports except FAR 91 Components and FAR 121 Components were designed to print on 8 1/2" X 11" paper. An example of each of these reports is provided in Appendix E in the same order as listed above.

3.1 Print Reports

The Extended Report Writer is used to print the Avionic Data Base reports. Prior to sending a report to the printer verify that the printer is properly set to print and paper is available.

To initialize the Extended Report Writer, type RPT after the prompt C> and press the return key <CR>:

C> RPT <CR>

Following the initialization messages, a menu such as that found in Figure 44 will appear. Located at the top of the menu is an action line.

Example:

Exit(), Test(), Run(), Stop(), Help(), Open(), Q(uit):

The only actions that should be utilized from here are R(un) to print a specified report and Q(uit) to return to the operating system.

Press 'R' and the action line will be replaced with a prompt requesting the report filename to be printed. Use the list of reports in Section 3.0 to select a report and type the report filename as shown in the example below. Press return key to continue with the selected report.

3.9 REPORTS

Reports are available to provide a copy of the Avionic Data Base in various formats to the staff members who do not have immediate access. The following is a list of the report file-names (in bold print) along with a brief description of each.

- ANTENNA.RPT - Antennas/Couplers: Component/model specifications for antennas and couplers.
Index number will be between 00000000 & 10000000
- AP.RPT - Auto Flight Components: Component/model specifications for auto flight components.
Index number will be between 22000000 & 23000000
- COM.RPT - Communication Components: Component/model specifications for communication components.
Index number will be between 23000000 & 24000000
- IND.RPT - Indicating/Recording Components: Component/model specifications for indicating and recording components.
Index number will be between 31000000 & 32000000
- NAV.RPT - Navigation Components: Component/model specifications for navigation components.
Index number will be between 34000000 & 35000000
- CINDEX.RPT - Index of Components: Index of the Avionic Data Base components. Lists for each component the manufacturers along with model and index numbers.
- MINDEX.RPT - Index of Manufacturers: Index of the Avionic Data Base manufacturers. Lists for each manufacturer the components being manufactured along with the corresponding model and index number.
- MFGR.RPT - Avionic Manufacturers: List of the manufacturers found in the Avionic Data Base including manufacturer abbreviated name, full name, address and telephone number.
- TSO.RPT - TSO Titles & Source Documents: TSO information including title, publication location and date, and source(s) for the TSOs found in the Avionic Data Base.
- FAR91.RPT - FAR 91 Components: Lists all components/models classified as FAR 91 including index, manufacturer, model, price and TSO's.
- FAR121.RPT - FAR 121 Components: Lists all components/models classified as FAR 121 including index, manufacturer, model, price and TSO's.

2.9 Action 9: End Session

Choose action 9 from the Main Menu to return to the IBM PC operating system when the Avionic Data Base session is complete. Type 9 and press the return key <CR>:

9 <CR>

This will terminate the session with the Avionic Data Base and a brief message, such as that shown below, will precede the operating system prompt C>.

Example:

End R:base 4000 Version 1.11 MSDOS

C>

This completes the session with the Avionic Data Base. The user may want to proceed to turn off the IBM PC operating system.

PROMPTS	
System/Chapter 23	- Communications
(YY) Sub-System/Section	(Z) Component
00 General	1 Emergency Landing Transmitter
10 Speech Communication	1 VHF Com Transceiver
	2 Nav/Com Transceiver
	3 HF Transceiver
	4 In-Flight Telephone
30 PA & Entertainment	1 PA System/Chimes
50 Audio Integrating	1 Control Panel
60 Static Discharging	1 Static Discharger
70 Audio & Video Monitoring	1 Voice Recorder
Press 'G' to return to previous prompt screen or 'Q' for the Main Menu.	

Figure 43

Listed below are the System/Chapters (XX) used in the Avionics Test Menu.

22	Auto Flight
23	Communications
31	Indicating/Recording Systems
34	Navigation
00	Antennas/Couplers

The Sub-System/Sections (YY) and Components (Z) which correspond to these System/Chapters are available from the following prompt screens.

Choose the System/Chapter for which you want to view Sub-System/Sections and Components (22, 23, 31, 34 or 00) :

Press escape key [ESC] and then 'G' for the next screen or '0' for the Main Menu.

Figure 42

he/she would like to view Sub-System/Sections and Components. See Figure 42 for an the example of this screen. Type the System/Chapter number and press the escape key [ESC].

Example:

Choose the System/Chapter for which you want to view Sub-System/Sections and Components (22, 23, 31, 34 or 00) : 23 [ESC]

Follow the direction given in Section 2.2.1 to continue to a screen listing the Sub-System/Sections and Components for the specified System/Chapter. Figure 43 is an example of the next screen to appear when System/Chapter 23 is entered on the prompt line of Figure 42.

To utilize this information to retrieve data for a specific type of component from the relation AVIONICS, for instance, Nav/Com Transceivers shown in the listing on Figure 43, the following condition would be used on the WHERE prompt line of the command specification.

Example:

WHERE index CONTAINS 23102

This will qualify a command to only retrieve information where the attribute INDEX contains the System/Chapter 23, the Sub-System/Section 10 and the Component number 2. The only components with an INDEX containing this sequence of five digits will be Nav/Com Transceivers.

When finished with the listing of Sub-System/Sections and components, follow the instructions located at the bottom of the screen. Press 'G' to return to the previous prompt screen (Figure 42) where another System/Chapter can be selected for viewing or press 'Q' to return to the Main Menu.

PROMPTS

XXYY - ATA Specification Code 100

The ATA Specification Code 100 defines the Systems and the Sub-Systems of aircraft. These definitions provide a classification for avionic components. 'XX' is the System/Chapter number and 'YY' is the Sub-System/Section number.

Z - Component

Each Sub-System of a System was reduced further to produce a listing of components as they pertain to the Sub-System definition. 'Z' is the number assigned to the individual component.

999 - Unique Number

'999' is the unique sequence number assigned to a model.

The following prompt screen lists the ATA Specification Code 100 System Chapters (XX) used in the Avionic Data Base.

Press 'G' to continue or 'Q' to return to the Main Menu.

Figure 41

PROMPTS

*** INDEXING CONVENTION ***

Each component/model of the Avionic Data Base was assigned a unique 8 digit index number to assist the user in retrieving data for a specific model or type of component. This 8 digit number is based on the Air Transport Association (ATA) Specification Code 100. The number consists of 4 segments:

XXYYZ999

Press 'G' to continue.

Figure 40

2.8.2 Indexing Convention

Each model of the Avionic Data Base was assigned an index number to assist the user in retrieving data for a specific model or type of component from the relation AVIONICS.

For an explanation of the indexing convention, type number 2 on the first prompt screen (Figure 38) and press the return key <CR>.

Example:

Choose either 1 or 2 and press return key : 2 <CR>

Figure 40 is an example of the next screen to appear which introduces the eight (8) digit index number and its four (4) segments:

XXYYZ999

As prompted, press 'G' to proceed to the next prompt screen, shown in Figure 41, which further explains the four segments of the index as follows:

```
XXYY : Air Transport Association (ATA)  
      Specification Code 100:  
      XX - System/Chapter  
      YY - Sub-System/Section  
      Z  : Component  
      999 : Unique Number
```

The screens that follow will further clarify the System/Chapters and the corresponding Sub-System/Sections and components. Press 'G' to continue as prompted. The next screen to appear lists the System/Chapters of the ATA Specification Code 100 and prompts the user to specify the System/Chapter for which

PROMPTS		
*****	AVIONIC DATA BASE - ABBREVIATIONS	*****
A/P	-	Autopilot
AC	-	Advisory Circular
ADF	-	Automatic Direction Finder
ADI	-	Attitude Director Indicator
AG	-	Attitude Gyro
ALK	-	alkaline
ALT	-	Altimeter
AM	-	amplitude modulation
AME	-	AM Equivalent
AMP	-	amplifier
ANNUN	-	annunciator
ARINC	-	Aeronautical Radio, Inc.
ATC	-	Air Traffic Control
ATI	-	Air Transport Indicator
ATR	-	Air Transport Racking
AUG	-	augmentation
Press 'G' to continue or 'Q' for the Main Menu.		

Figure 39

The Avionic Data Base provides an explanation of the indexing convention and a listing of the abbreviations utilized in the database.

- (1) Abbreviations
- (2) Indexing Convention

Choose either 1 or 2 and press return key :

Figure 38

of the model indexing convention. This online assistance can be obtained by selecting action 8 from the Main Menu. Type 8 and press the return key <CR>:

8 <CR>

The screen will clear and a prompt will appear which provides the option of selecting either the abbreviations or the indexing convention by entering the corresponding number. See Figure 38 for an example of this screen.

2.8.1 Abbreviations

Abbreviations are utilized in the Avionic Data Base to shorten various avionic component names and to fit the remarks in the limited field space. To view the list of the abbreviations used in the Avionic Data Base, type 1 on the first prompt screen (Figure 38) and press the return key <CR>.

Example:

Choose either 1 or 2 and press return key : 1 <CR>

Figure 39 is an example of the first of seven screens to follow, listing in alphabetical order the abbreviations and definitions. (See Appendix D for a complete list of the abbreviations.) At the bottom of each screen the user is prompted to press 'G' to continue or 'Q' to return to the Main Menu. The final abbreviation screen provides the chance to review the abbreviations by pressing 'G'. This will bring the first screen of abbreviations into view again.

PROMPTS

Valid conditions are:

attribute	EXISTS
attribute	FAILS
attribute	EQ value
attribute	NE value
attribute	GT value
attribute	GE value
attribute	LT value
attribute	LE value
attribute	CONTAINS value

Examples of the WHERE clause:

WHERE price LT 1000.

WHERE index CONTAINS 3410

WHERE tso EXISTS AND far EQ 121 AND mfgn NE king

Note: Only the condition needs to be specified when using a prompt screen.

Press 'G' to return to the original prompt screen or 'Q' for the Main Menu.

Figure 37

Example:

WHERE index CONTAINS 35101 AND tso EQ C91 OR tso EQ C5c

To aid in the understanding of the syntax, the attributes specified in this example are shown in lower case letters and the conditions are underlined.

The syntax for valid conditions and examples are provided in the next screen, see Figure 37. Press 'G' as directed by the message at the bottom of the screen to continue.

Remember that only the condition(s) (the underlined portion of the example below) needs to be specified when filling in the prompt line for the WHERE command.

Example:

WHERE compon EQ "Nav Rec"

Once again, the attribute is shown in in lower case and the value in comparison is in initial caps.

Note: If an attribute is being compared to a value which contains two or more words as in the above example, then that value must be enclosed in quotes.

Refer to the form or relation description provided under the current action or Appendix A for assistance in identifying the attribute(s) to be specified in the WHERE command clause.

2.8 Action 8: Database Abbreviations and Model Indexing Convention

The Avionic Data Base provides a reference for the abbreviations which are used in the Avionic Data Base and an explanation

E(edit), T(test), R(run), S(set), H(help), O(open), Q(quit):

E - Edit or create a report
T - Test run of a report
R - Run a report
S - Set user password
H - Help using the Extended Report writer
O - Open database
Q - Quit XRW and return to system

PS - Show attributes and variables. May be used at any screen.

Figure 44

Example:

Report Filename []: NAV.RPT <CR>

Note, if a report was previously specified it will be shown in the brackets. The user may press the return key to continue without specifying a report filename if the filename shown in the brackets is the desired report.

When the return key is pressed, this prompt will be replaced with another which displays in brackets where output is currently set. If the user is satisfied with the output setting, he/she will press the return key <CR>. To alter the current setting, type either TERMINAL or PRINTER in the space provided beside the display and press the return key <CR>.

Example:

Output [TERMINAL]: PRINTER <CR>

Once the return key is pressed, the screen will go blank and execution of the report will start. While the printer buffer is loading, the screen will fill with dots and then the report will begin to print.

When printing is finished, the original prompt screen (Figure 44) will return. The user can repeat this process and choose another report to print or he/she can press 'Q' to return to the system prompt C> which indicates that the session with the Extended Report Writer has ended. The user may proceed to turn off the IBM PC operating system.

4.0 TROUBLESHOOTING

This section provides information for the general user to attempt to correct system errors resulting from an improper entry. In the event that this information fails to solve the problem, consult the technical staff.

An incorrect entry or an entry before a prompt line is received may result in an error. Depending on the situation the user may receive an error message similiar to the following.

Example:

```
Press F500 key to abort, anything else to continue
```

This message will give the user a chance to correct the problem by responding accordingly. However, if the error should result in a message such as that in the following example, the database will need to be reinitialize to continue.

Example:

```
Terminating all WHILE and IF blocks  
Switching INPUT back to TERMINAL  
R>
```

To reinitialize the Avionic Data Base, first note the prompt located at the end of the message. If the prompt received is R>, as in the above message, the user can reinitialize the Avionic Data Base by typing INPUT RBASE.DAT after the prompt R> and press the return key <CR>:

```
R> INPUT RBASE.DAT <CR>
```

This will start the initialization process which is the same as when the system was first booted, and the Main Menu will appear. However, if another prompt R> is received when the return key is pressed, this is an indication that the system is locked. In

this situation, hold down the control key and alternate key, and then press the delete key (see Appendix B for help with locating these keys). Then release all three keys at one time. This will cause the system to reset itself and the user will receive the prompt C>. Type AVIONICS after the prompt C> and press the return key <CR> to initialize the Avionic Data Base.

Example:

C> AVIONICS <CR>

Likewise, use these same instructions if the prompt C> follows the previous error message instead of the prompt R>.

APPENDIX A

AVIONIC DATA BASE
ATTRIBUTE DICTIONARY FOR RELATIONS

ATTRIBUTE DICTIONARY FOR RELATIONS

Relation Name: AVIONICS

Attribute Name	Attribute Length	Description	Remarks
ALTR1	25	Altitude Range	
ALTR2	25	Altitude Range (cont)	
ALTR3	25	Altitude Range (cont)	
ALTR4	25	Altitude Range (cont)	
ASOFDATE	5	Date Data was Collected	ASOFDATE = MM/YY
BREAK1	40	Weight and Dimensions of Model If applicable breakdown will be given by unit and price per unit included.	BREAK# = Unit Name, #LBS, H/W/D in Inches, and Price
BREAK2	40	Weight and Dimensions (cont)	
BREAK3	40	Weight and Dimensions (cont)	
BREAK4	40	Weight and Dimensions (cont)	
BREAK5	40	Weight and Dimensions (cont)	
COMPON	25	Component Name	Key Identifier
FAR	6	Federal Aviation Regulation 91 or 121	Key Identifier FAR 121 only if indicated by manufacturer
INDEX	8	8 Digit Index Number	Key Identifier INDEX = XXYY2999 XXYY - ATA Specification Code 100: XX - System/Chapter YY - Sub-System/Section Z - Component Type 999 - unique model number
INPUT	15	Model Input	
MFGR	20	Abbreviated Manufacturer Name	Key Identifier
MODEL	15	Component Model Number	Key Identifier
PRICE	12	Price of Model	Can <u>only</u> be a numeric figure
REMARK1	40	Special Model Features	
REMARK2	40	Special Model Features (cont)	
REMARK3	40	Special Model Features (cont)	
REMARK4	40	Special Model Features (cont)	

ATTRIBUTE DICTIONARY FOR RELATIONS

Relation Name: AVIONICS (CONTINUED)

Attribute Name	Attribute Length	Description	Remarks
REMARKS	40	Special Model Features (cont)	
REMARKS	40	Special Model Features (cont)	
TSO	25	Technical Standard Order(s)	As indicated by Manufacturer
WARR	10	Model Warranty	WARR = # YR

ATTRIBUTE DICTIONARY FOR RELATIONS

Relation Name: MANUFACT

Attribute Name	Attribute Length	Description	Remarks
ADD1	30	Address of Manufacturer	
ADD2	30	Address of Manufacturer (cont)	
CITY	20	City of Manufacturer	
COUNTRY	20	Country of Foreign Manufacturer	Country other than USA
DIVISION	35	Division Name of Manufacturer	If Applicable
FULMFGR	30	Full Manufacturer Name	
MFGR	20	Abbreviated Manufacturer Name	As used in relation AVIONICS
PHONE	12	Telephone Number of Manufacturer	
STATE	3	State of Manufacturer	
ZIP	5	Zip Code of Manufacturer	

ATTRIBUTE DICTIONARY FOR RELATIONS

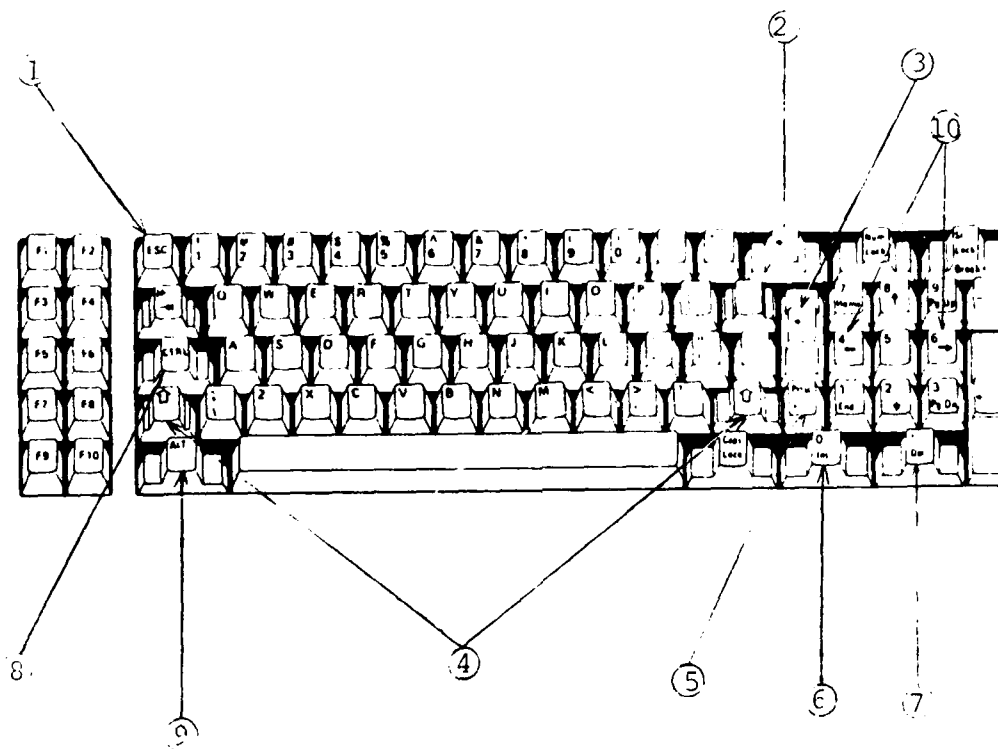
Relation Name: TSUREF

Attribute Name	Attribute Length	Description	Remarks
LOC	20	Location of TSO	Location will be the FAR Chapter or TSO number indicating that the TSO has been either recently reissued or it is a new TSO
SORTNUM	4	Sort number	3 digit number and if applicable a letter derived from the TSO number used for sorting
SOURCE1	4	Abbreviated name of the Association whose standard was used to write the TSO	Utilized when 2 Associations were referenced in the TSO
SOURCE2	4	Abbreviated name of the Association whose standard was used to write the TSO	Includes only the TSO numbers which appear in component/model specifications of relation AVIONICS
TSONO	5	Technical Standard Order (TSO) Number	
TSOTITL1	30	Title of TSO	
TSOTITL2	30	Title of TSO (cont)	
YRDATE	8	TSO Publication Year or Date	Publication year of FAR or publication date of TSO

APPENDIX B

IBM PC KEYBOARD

IBM PC KEYBOARD



- 1 - Escape key [ESC]
- 2 - Backspace key
- 3 - Return key <CR>
- 4 - Shift keys
- 5 - Print Screen key
- 6 - Insert key
- 7 - Delete key
- 8 - Control key
- 9 - Alternate key
- 10 - Arrow keys

Note: Any prompt screen or output display can be sent to the printer for a printed copy. To do this hold the shift key down and press the print screen key [Prtsc] and release both keys simultaneously. This will cause the entire screen to be printed.

APPENDIX C

AVIONIC DATA BASE FORMS

FORM: AVIONIC1

Index :

Component Name :

Manufacturer :

Model Number :

Price :

FAR :

TSO :

Warranty :

FORM: AVIONIC2

Index : Component Name :
Model : Manufacturer :
=====

Altitude Range : Input :
:
:
:

Unit, Weight, H/W/D & Price :
:
:
:
:

Remarks :
:
:
:
:
:

Date of Entry (MM/YY) :

AD-A153 810

AVIONICS DATA BASE USERS MANUAL (U) APPLIED SYSTEMS INST 2/2
WASHINGTON DC J MCGOWAN ET AL. JAN 85 FAA-APD-85-5
DTFA01-83-Y-30629

UNCLASSIFIED

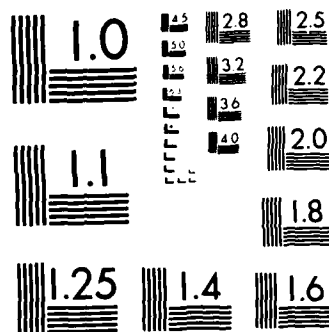
F/G 1/3

NL

END

FILMED

DTIC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

FORM: MANUFACT

Manufacturers Abbreviated Name :

Manufacturers Full Name :

Division (If Applicable) :

Street Address :
(Continued) :

City :

State :

Zip :

Country (Other than U.S.A) :

Telephone Number :

FORM: TSOREF

Sort Number :

TSD Number :

TSD Title :
(continued)

TSD Location :

Publication Date :

Source Standard(s) :

APPENDIX D

AVIONIC DATA BASE ABBREVIATIONS

A V I O N I C D A T A B A S E A B B R E V I A T I O N S

A/P	-	Autopilot
AC	-	Advisory Circular
ADF	-	Automatic Direction Finder
ADI	-	Attitude Director Indicator
AG	-	Attitude Gyro
ALK	-	alkaline
ALT	-	Altimeter
AM	-	amplitude modulation
AME	-	AM Equivalent
AMP	-	amplifier
ANNUN	-	annunciator
ARINC	-	Aeronautical Radio, Inc.
ATC	-	Air Traffic Control
ATI	-	Air Transport Indicator
ATR	-	Air Transport Racking
AUG	-	augmentation
AVG	-	average
BETWN	-	between
CDI	-	Course Deviation Indicator
CDU	-	Control Deviation Unit
CM	-	centimeter
COM	-	Communication
CRT	-	Cathode Ray Tube
CW	-	continous wave
DFDR	-	Digital Flight Data Recorder
DG	-	Directional Gyro
DH	-	decision height
DME	-	Distance Measuring Equipment
ECDI	-	Electronic Course Deviation Indicator
EFIS	-	Electronic Flight Instrument System
EHSI	-	Electronic Horizontal Situation Indicator
ELT	-	Emergency Locator Transmitter
FAR	-	Federal Aviation Regulation
FD	-	Flight Director
FDAU	-	Flight Data Acquisition Unit
FDR	-	Flight Data Recorder
FM	-	Frequency Modulation
FMC	-	Flight Management Computer
GPWS	-	Ground Proximity Warning System
GS	-	Glideslope
HF	-	High Frequency
Hg	-	mercury
HGT	-	height
HSI	-	Horizontal Situation Indicator
HZ	-	hertz
ICAO	-	International Civil Aviation Organization
IFCS	-	Integrated Flight Control System
ILS	-	Instrument Landing System
INCL	-	includes
IND	-	Indicator

A B B R E V I A T I O N S (CONTINUED)

INS	- Inertial Navigation System
INSTR	- instrument
INTER	- integrated
IRS	- Inertial Reference System
KTS	- knots
KW	- kilowatt
L	- length
LOC	- Localizer
LSB	- lower side band
MAX	- maximum
Mb	- millibar
MC	- megacycle
MCU	- Modular Concept Unit
MG	- Magnetic Gyro
MIN	- minimum
MLS	- Microwave Landing System
MNPS	- Minimum Nav Performance Specifications
MNTD	- mounted
MNTG	- mounting
n	- inches
NAV	- Navigation
NM	- nautical miles
OBS	- Omni Bearing Selector
OEU	- Optional Equipment Unit
OPT	- optional
PA	- Passenger Amplifier
PEP	- Peak Envelope Power
PNI	- Pictorial Navigation Indication
PWR	- power
QTY	- quantity
R/T	- Receiver Transmitter
RCU	- Receiver Computer Unit
REC	- Receiver
REQD	- required
RMI	- Radio Magnetic Indicator
RPU	- Receiver Processor Unit
RTCA	- Radio Technical Commission for Aeronautics
SAE	- Society of Automotive Engineers, Inc.
SSB	- single side band
STD	- standard
SYS	- system
TSO	- Technical Standard Order
TTS	- time-to-station
USB	- upper side band
V	- volt
VAC	- Volt Alternating Current
VDC	- Volt Direct Current
VFR	- Visual Flight Rule

A B B R E V I A T I O N S
(CONTINUED)

VG	-	Vertical Gyro
VHF	-	Very High Frequency
VOR	-	VHF Omnidirectional Range Station
W	-	watts
WT	-	weight
YR	-	year

APPENDIX E

AVIONIC DATA BASE REPORTS

INDEX 00001176
 COMPONENT NAME ANTENNA - ELT
 MANUFACTURER DAYTON-GRANGER
 MODEL ELT 10-214-2
 FAR 91
 UNIT, WT, H/W/D & PRICE 0.25 LB 9.12 HGT
 REMARKS EXTERNALLY MNTD ELT ANTENNA SYSTEM;
 SUPPLIED W/ COAXIAL CABLE
 WARRANTY 1 YR
 AS OF DATE 5/84

INDEX 00001177
 COMPONENT NAME ANTENNA - ELT
 MANUFACTURER DAYTON-GRANGER
 MODEL ELT 10-177
 FAR 91
 UNIT, WT, H/W/D & PRICE 2.5 LBS 2.5/12/12
 REMARKS FLUSH MOUNTED; SYSTEM CONSISTS OF LEFT
 ANTENNA, RIGHT ANTENNA & 2 CABLE
 ASSEMBLIES
 WARRANTY 1 YR
 AS OF DATE 5/84

INDEX 00001480
 COMPONENT NAME ANTENNA - ADF
 MANUFACTURER SENSOR SYSTEMS
 MODEL S72-1712
 FAR 121
 T50 C41c
 UNIT, WT, H/W/D & PRICE 8.8 LBS 10.62 x 30 BASE 1.77 HGT
 REMARKS COMBINED LOOP/SENSE ANTENNA FOR USE W/
 ARINC 712 DIGITAL ADF RECEIVER; MEETS
 ARINC 712; FREQUENCY RANGE 190-1750 KHz-
 USED BY AIRBUS A300/A310, B757/767 & 199
 WARRANTY 2YR/5000HR
 AS OF DATE 6/84

INDEX 22101055
 COMPONENT NAME AUTOPILOT
 MANUFACTURER CENTURY
 MODEL CENTURY 31
 PRICE \$8,717.00
 FAR 91
 INPUT 14/28 VDC
 UNIT, WT, H/W/D & PRICE TOTAL SYSTEM WT 22-24.8 LBS
 DG 3.02/3.2/7
 AG 3.02/3.2/7
 PROGRAMMER 2.35/6.25/12.5
 REMARKS TWO AXIS ROLL/HEADING/PITCH AUTOPILOT
 W/ BUILT-IN VOR/LOC/GS RADIO COUPLERS;
 PRICE INCL CABLE HARNESS; DG OPT-MAY BE
 SUBSTITUTED W/ COMPATIBLE HS
 AS OF DATE 5/84

INDEX 22101056
 COMPONENT NAME AUTOPILOT
 MANUFACTURER CENTURY
 MODEL CENTURY 21
 PRICE \$4,995.00
 FAR 91
 INPUT 14/28 VDC
 UNIT, WT, H/W/D & PRICE TOTAL SYSTEM WT 12.5-13.4 LBS
 DG 3.02/3.2/7
 AG 3.02/3.2/7
 PROGRAMMER 1.83/6.24/11.18
 REMARKS ROLL/HEADING AUTOPILOT W/ BUILT IN VOR/
 LOC RADIO COUPLER; DG OPT-MAY BE
 SUBSTITUTED W/ COMPATIBLE HSI; CABLE
 HARNESS INCL IN PRICE; PANEL MNTD DG,
 AG & PROGRAMMER
 AS OF DATE 5/84

INDEX 22101057
 COMPONENT NAME AUTOPILOT
 MANUFACTURER CENTURY
 MODEL CENTURY III
 PRICE \$7,955.00
 FAR 91
 INPUT 14/28 VDC
 UNIT, WT, H/W/D & PRICE TOTAL SYSTEM WT 19.5-24 LBS
 SQUARE DG 3.25/3.37/6.37
 SQUARE AG 3.37/3.37/7.01
 CONTROL CONSOLE 2.25/5/2.5
 REMARKS TWO AXIS ROLL/HEADING/PITCH AUTOPILOT;
 ROUND GYRO OR SQUARE GYRO MAY BE CHOSEN
 FOR COCKPIT PANEL; FOR SQUARE GYRO ADD
 \$370 TO PRICE; DG OPT-MAY BE SUBSTITUTED
 W/ COMPATIBLE HSI; PRICE INCL CABLE
 HARNESS; RADIO & GS COUPLERS OPT
 AS OF DATE 5/84

INDEX 23001088
 COMPONENT NAME ELT
 MANUFACTURER EMERGENCY BEACON
 MODEL EBC 302-H
 PRICE \$730.00
 FAR 91/121
 TSO C91
 UNIT, WT, H/W/D & PRICE 1.8 LBS 6.5/2.5/2
 REMARKS DESIGNED FOR HELICOPTER USE; 300 MILE
 RANGE; OPERATING LIFE 200 HOURS;
 WATERPROOF FOR 20 HOURS
 AS OF DATE 5/84

INDEX 23001089
 COMPONENT NAME ELT
 MANUFACTURER ELT'S UNLIMITED
 MODEL DEFT-1
 PRICE \$415.00
 FAR 91/121
 TSO C91
 INPUT 3YR BATTERY PACK
 UNIT, WT, H/W/D & PRICE 2.64 LBS 2.6/3.2/9.4
 REMARKS GIVEN PRICE INCLUDES ELT & BATTERY ONLY;
 A COMPLETE AUTOMATICALLY ACTIVATED
 SYSTEM INCLUDES TRANSMITTER, ANTENNA,
 44-INCH OF ANTENNA CABLE, MOUNTING TRAY
 & 3 YR BATTERY PACK FOR A PRICE OF \$530
 WARRANTY 1 YR
 AS OF DATE 5/84

INDEX 23001122
 COMPONENT NAME ELT
 MANUFACTURER MARTECH
 MODEL CIR-11-7
 PRICE \$295.00
 FAR 91/121
 TSO C91
 INPUT 13 ALKALINE BAT
 UNIT, WT, H/W/D & PRICE 3.5 LBS 8.1563/2.75/3
 REMARKS INCL BATTERY PACK, PORTABLE & FIXED
 ANTENNAS, & MOUNTING BRACKET; OPERATING
 LIFE 48 HOURS MIN; RANGE TO 200 MILES;
 BATTERY SERVICE LIFE 24 MONTHS; FIXED/
 REMOTE ELT
 WARRANTY 1 YR
 AS OF DATE 5/84

INDEX 31001312
 COMPONENT NAME ALTITUDE ALERTER
 MANUFACTURER IDC
 MODEL 540-20545-[]
 PRICE \$4,336.00
 FAR 91
 INPUT 26 VAC, 400 HZ
 ALTITUDE RANGE 0 TO 50000 FT
 UNIT, WT, H/W/D & PRICE ALTITUDE ALERTER 2 LB 1.542/3.26/5 \$3620
 ALERTER TONE GENERATOR 0.75 LB \$716
 REMARKS TYPICAL SYSTEM INCL THE ALTITUDE ALERTER
 & ALERTER TONE GENERATOR; AUTOMATIC
 VISUAL & AURAL SIGNALS ALERT APPROACH
 TO & DEPARTURE FROM FLIGHT LEVEL;
 TRIGGER LEVEL 1000 FT OUTER 300 FT
 INNER; PRICE=AVG
 WARRANTY 2 YR
 AS OF DATE 5/84

INDEX 31001326
 COMPONENT NAME ALTITUDE ALERTER
 MANUFACTURER IDC
 MODEL 540-17688-[]
 PRICE \$4,540.00
 FAR 91
 INPUT 26 VAC, 400 HZ
 ALTITUDE RANGE 0 TO 50000 FT
 UNIT, WT, H/W/D & PRICE 2 LBS 1/2 3 ATI
 REMARKS PANEL MNTD; AUTOMATIC VISUAL & AURAL
 SIGNALS; TRIGGER LEVELS 1000 FT OUTER &
 300 FT INNER LEVEL ABOVE & BELOW PRESET
 ALTITUDE
 WARRANTY 2 YR
 AS OF DATE 5/84

INDEX 31001327
 COMPONENT NAME ALTITUDE ALERTER
 MANUFACTURER IDC
 MODEL 540-24982-[]
 PRICE \$3,600.00
 FAR 91
 INPUT 28 VDC
 UNIT, WT, H/W/D & PRICE 1 LB 1.16/3.32/3.5
 REMARKS PANEL MNTD; AUTOMATIC VISUAL & AURAL
 SIGNALS ALERT APPROACH TO OR DEPARTURE
 FROM A PRESELECTED FLIGHT LEVEL; TRIGGER
 LEVELS 1000 FT OUTER & 300 FT INNER LEVEL
 ABOVE & BELOW PRESET ALTITUDE; PROVIDES
 ALTDE ERROR SIGNAL TO ALTDE PRESELECTION SYS
 WARRANTY 2 YR
 AS OF DATE 5/84

INDEX 34101001
 COMPONENT NAME ALTIMETER - BLIND ENCODER
 MANUFACTURER POINTER
 MODEL L115
 PRICE \$575.00
 FAR 91
 TSO C88
 INPUT 13.75/27.5 VDC
 ALTITUDE RANGE -1000 TO 20000 NORMAL
 OPERATING RANGE
 UNIT, WT, H/W/D & PRICE 1 LB 3.25/7.25/2
 REMARKS BLIND ENCODER; COMPATIBLE W/ ALL TSO C74
 TRANSPONDERS; LINE FILTER \$22.50;
 INSTALLATION KIT \$7.50
 AS OF DATE 5/84

INDEX 34101002
 COMPONENT NAME ALTIMETER - ENCODING
 MANUFACTURER TC1
 MODEL D120-P2-T
 PRICE \$813.00
 FAR 91
 TSO C88
 INPUT 10-15/22-30 VDC
 ALTITUDE RANGE -1000 TO 20000 FT \$785.
 -1000 TO 25000 FT \$810.
 -1000 TO 30000 FT \$820.
 -1000 TO 35000 FT \$835.
 UNIT, WT, H/W/D & PRICE 1 LB 3.25/3.25/3.75
 REMARKS COMPATIBLE W/ TRANSPONDERS MFR BY KING,
 COLLINS, RCA, ARC, BENDIX, GENAVE, &
 NARCO; PRICE = AVG SEE ENTRY ALTITUDE
 RANGE FOR PRICES ACCORING TO RANGE
 WARRANTY 1 YR
 AS OF DATE 5/84

COMPONENT =====	MANUFACTURER =====	MODEL =====	INDEX =====
ADF	ARC/CESSNA	C-1046A	34506094
	ARC/CESSNA	R-446A	34506096
	ARC/CESSNA	R-546E	34506095
	BENDIX	DFS 43	34506448
	COLLINS	ADF-60	34506297
	COLLINS	ADF-650	34506374
	COLLINS	ADF-700	34506421
	COLLINS	DF-206	34506427
	KING	KDF 8000-01	34506196
	KING	KDF 806	34506010
	KING	KR 86	34506220
	KING	KR 87	34506229
	NARCO	ADF 141	34506061
	NARCO	ADF 841	34506060
AIR DATA SYSTEM	COLLINS	ADS-80	34102365
	SPERRY	ADZ-242	34102405
ALTIMETER - BLIND ENCODER	AEROSONIC	1019[]	34101006
	KING	KE 127	34101306
	NARCO	AR-500	34101004
	POINTER	L115	34101001
	TERRA	AT 3000	34101003
ALTIMETER - ENCOD/ALERter	ARC/CESSNA	EA801A/AA-801A	34101025
	SIGMA-TEK	1U309A	34101024
ALTIMETER - ENCODING	AERO MECH	8140B[]	34101017
	AERO MECH	8141B-35[]	34101012
	AERO MECH	8142B-35	34101010
	AERO MECH	AM250C-[]	34101005
	AEROSONIC	101450-012[]	34101024
	AEROSONIC	101450-[]	34101008
	AEROSONIC	1014[]	34101011
	AEROSONIC	102200-1184[]	34101009
	AEROSONIC	102200-118[]	34101015
	AEROSONIC	102200-18[]	34101007
	AEROSONIC	102200-[]	34101010
	ARC/CESSNA	EA 401A	34101027
	IDC	518-28007-[]	34101028
	IDC	519-28702-[]	34101029
	IDC	521-29007-[]	34101030
	IDC	570-24929-[]	34101026
	IFR	IFR-E41-[]	34101014
	KING	KEA 129[]	34101187
	KING	KEA 130	34101030
	KING	KEA 130[]	34101186
	KING	KEA 346	34101188
	KOLLSMAN	845152-10-004	34101121
	KOLLSMAN	ALTI-CODER II	34101130
	SIGMA-TEK	1U306A	34101132
	TCI	D120-P2-T	34101000
	UNITED INSTRUMENTS	5035[]	34101011

MANUFACTURER =====	COMPONENT =====	MODEL =====	INDEX =====
AIRESEARCH	NAV MANAGEMENT SYSTEM	AIRNAV 200	34601346
	NAV MANAGEMENT SYSTEM	AIRNAV 300B	34601344
	NAV MANAGEMENT SYSTEM	AIRNAV 400 DUAL	34601342
	NAV MANAGEMENT SYSTEM	AIRNAV 400 SNGL	34601343
ARC/CESSNA	ADF	C-1046A	34506094
	ADF	R-446A	34506096
	ADF	R-546E	34506095
	ALTIMETER - ENCOD/ALERter	EA801A/AA-801A	34101025
	ALTIMETER - ENCODING	EA 401A	34101027
	AUDIO CONTROL PANEL	F-1010B	23501093
	AUTOPILOT	200A	22101076
	AUTOPILOT	300A	22101077
	AUTOPILOT	400B	22101257
	COM TRANSCEIVER - VHF	RT-1038A	23101112
	DME	RTA-1077B	34502103
	DME	RTA-476A	34502102
	DME	RTA-876A	34502101
	DME	RTS-477A	34502104
	GS	R-1043A	34301075
	GS	R-443B	34301090
	INDICATOR - NAV	IN-1048AC	34201091
	INDICATOR - NAV	IN-1049AC	34201092
	INDICATOR - NAV	IN-380A	34201082
	INDICATOR - NAV	IN-381A	34201083
	INDICATOR - NAV	IN-385A	34201084
	INDICATOR - NAV	IN-386A	34201085
	INDICATOR - NAV	IN-482AC	34201080
	INDICATOR - NAV	IN-483AC	34201081
	INDICATOR - NAV	IN-485AC	34201079
	INDICATOR - NAV	IN-486AC	34201074
	INDICATOR - RMI	IN-1004A	34201324
	INDICATOR - RMI	IN-404A	34201323
	INTEG FLIGHT CONTROL SYS	100 A/P & IFCS	34601111
	INTEG FLIGHT CONTROL SYS	400B IFCS	34601109
	INTEG FLIGHT CONTROL SYS	800B IFCS	34601110
	MB RECEIVER	R-402A	34302087
	NAV SYSTEM	R-1048A	34503078
	NAV/COM TRANSCEIVER	RT-385A	23102097
	NAV/COM TRANSCEIVER	RT-485B	23102098
	RNAV	RN-1079A	34504108
	RNAV	RN-478A	34504105
	RNAV	RN-479A	34504106
	RNAV	RN-878A	34504107
	TRANSPONDER	RT-359A	34505099
	TRANSPONDER	RT-459A	34505086
	TRANSPONDER	RT-859A	34505100
ARNAV	LRN - LORAN C	ARNAV 20	34501066
	LRN - LORAN C	ARNAV 50	34501069
	LRN - LORAN C	ARNAV 60	34501067
	LRN - LORAN C	AVA-1000	34501068

ABBREVIATED NAME
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MANUFACTURERS ADDRESS
=====

AERO MECH AERO MECHANISM
 20327 NORDHOFF STREET
 CHATSWORTH CA 91311
 213/709-2851

AERONETICS AERONETICS
 AN AAR COMPANY
 2100 TOUHY AVENUE
 ELK GROVE VILLAGE IL 60007
 312/437-9300

AEROSONIC AEROSONIC CORP
 POB 4627
 CLEARWATER FL 33518
 813/461-3000

AIM AVIATION INSTRUMENT MFRG, CORP
 817 DESSAU ROAD
 AUSTIN TX 78753
 512/251-2351

AIRE-SCIENCES AIRE-SCIENCES, INC
 216 PASSALC AVENUE
 FAIRFIELD NJ 07006
 201/228-1880

AIRESEARCH AIRESEARCH MANUFACTURING CO
 A DIVISION OF THE GARRETT CORP
 2525 W 190th STREET
 TORRANCE CA 90503
 213/512-1025

ARC/CESSNA ARC AVIONICS DIVISION
 CESSNA AIRCRAFT COMPANY
 POB 150
 BOONTON NJ 07005
 201/334-1800

ARNAV ARNAV SYSTEMS, INC
 4740 RIDGE DRIVE, NE
 POB 7078
 SALEM OR 97303
 503/393-2550

TSO # =====	TSO TITLE =====	LOCATION & PUBLICATION DATE =====	SOURCE(S) =====
C3b	TURN & SLIP INDICATOR	FAR PART 37.113 1968	FAA
C4c	BANK & PITCH INSTRUMENTS	FAR PART 514.14 1960	SAE
C5c	DIRECTION INSTRUMENT, NON- MAGNETIC, GYRO-STABILIZED TYPE	FAR PART 37.115 1980	SAE
C6c	DIRECTION INSTRUMENT, MAGNETIC	FAR PART 37.116 1980	SAE
C8b	RATE OF CLIME INDICATOR, PRESSURE ACTUATED	FAR PART 514.18 1960	SAE
C9c	AUTOMATIC PILOTS	FAR PART 514.19 1961	SAE
C10b	AIRCRAFT ALTIMETER, PRESSURE ACTUATED, SENSITIVE TYPE	FAR PART 37.120 1980	SAE
C31b	HF RADIO COMMUNICATION TRANSMITTING EQUIP	FAR PART 514.58 1960	RTCA
C31c	HF RADIO COMMUNICATION TRANSMITTING EQUIP	FAR PART 37.158 1980	FAA
C32b	HF RADIO COMMUNICATION RECEIVING EQUIP	FAR PART 37.159 1960	FAA
C32c	HF RADIO COMMUNICATION RECEIVING EQUIP	FAR PART 37.159 1980	FAA
C34b	AIRBORNE ILS GLIDE SLOPE EQUIP	FAR PART 514.60 1964	FAA RTCA
C34c	ILS GLIDE SLOPE RECEIVNG EQUIP	FAR PART 37.160 1980	RTCA
C35b	RADIO MARKER RECEIVING EQUIP	FAR PART 514.37 1959	RTCA
C35c	RADIO MARKER RECEIVING EQUIP	FAR PART 514.37 1964	FAA RTCA
C35d	RADIO MARKER RECEIVING EQUIP	FAR PART 37.137 1980	RTCA
C36b	AIRBORNE ILS LOCALIZER RECEIVING EQUIP	FAR PART 514.61 1965	FAA RTCA
C36d	ILS LOCALIZER RECEIVING EQUIP	TSO C36d 3/21/84	RTCA

INDEX	COMPONENT	MANUFACTURER	MODEL	PRICE	TSD NUMBERS
00001176	ANTENNA - ELT	DAYTON-GRANGER	ELT 10-214-2		
00001177	ANTENNA - ELT	DAYTON-GRANGER	ELT 10-177		
00001481	ANTENNA - VOR/LOC/GS	SENSOR SYSTEMS	S65-247-12		C34b, C36b, C40
00001487	ANTENNA - RADIO ALTIMETER	SENSOR SYSTEMS	S67-2002		C87
00001488	ANTENNA - VHF	DORNE & MARGOLIN	DM C15-1		
00001491	ANTENNA - MB	DAYTON-GRANGER	P/N 15970		
00001492	ANTENNA - DME/TRANSPONDER	DAYTON-GRANGER	P/N 15980		
00001493	ANTENNA - MB	DAYTON-GRANGER	FMB 10-272-1		C35d
00001494	ANTENNA - MB	DAYTON-GRANGER	EMB 10-14		C35d
00001495	ANTENNA - MB	DAYTON-GRANGER	MB 10-128		
00001496	ANTENNA - VOR/GS	KING	KA 145	\$115.00	
00001497	ANTENNA - VOR/GS	KING	KA 140	\$105.00	
00001498	ANTENNA - GS	KING	KA 22	\$60.00	
00001499	ANTENNA - MB	KING	KA 26	\$95.00	YES
00001500	ANTENNA - RADIO TELEPHONE	KING	KA 46A	\$245.00	
00001501	ANTENNA - DME/TRANSPONDER	KING	KA 60	\$50.00	YES
00001502	ANTENNA - HF SSB	KING	KA 98	\$835.00	YES
00001510	ANTENNA - VOR/LOC	DORNE & MARGOLIN	DM N42-1		C40a, C34b, C36c
00001511	ANTENNA - VOR/LOC	DORNE & MARGOLIN	DM N4-15		C40a
00001512	ANTENNA - VOR/LOC	DORNE & MARGOLIN	DM N4-4		C40a
00001514	ANTENNA - VHF	DORNE & MARGOLIN	DM C81-1		
00001516	ANTENNA - VOR/LOC	DORNE & MARGOLIN	DM N4-45		
00001517	ANTENNA - VOR/LOC	DORNE & MARGOLIN	DM 155		
00001519	ANTENNA - MB	DORNE & MARGOLIN	DM N27-SERIES		C35c
00001520	ANTENNA - MB	DORNE & MARGOLIN	DM N43-1		C35c
00001525	ANTENNA - DME/TRANSPONDER	DORNE & MARGOLIN	DM NE 52-SERIES		C74, C66a
00001526	ANTENNA - DME/TRANSPONDER	DORNE & MARGOLIN	DM NI 70		C74b, C66a

INDEX	COMPONENT	MANUFACTURER	MODEL	PRICE	TSO NUMBERS
00001480	ANTENNA - ADF	SENSOR SYSTEMS	S72-1712		C41c
00001482	ANTENNA - MB	SENSOR SYSTEMS	S35-2000-()		C35c
00001483	ANTENNA - MB	SENSOR SYSTEMS	S35-1000-()		C35c
00001484	ANTENNA - GS	SENSOR SYSTEMS	S41422-()		C34b
00001485	ANTENNA - VHF	SENSOR SYSTEMS	S65-8282		C37b, C38b
00001486	ANTENNA - DME/TRANSPONDER	SENSOR SYSTEMS	S65-5366-()		
00001490	ANTENNA - RADIO TELEPHONE	DORNE & MARGOLIN	DM C57-1		
00001509	ANTENNA - VOR/LOC/GS	DORNE & MARGOLIN	DM N4-17		C34b, C36c, C40a
00001513	ANTENNA - VHF	DORNE & MARGOLIN	DM C50-17		
00001515	ANTENNA - VHF	DORNE & MARGOLIN	DM C50		C37b, C38b
00001518	ANTENNA - VOR	DORNE & MARGOLIN	DM N56-1		C40a
00001521	ANTENNA - DME/TRANSPONDER	DORNE & MARGOLIN	DM 1601354		
00001522	ANTENNA - DME/TRANSPONDER	DORNE & MARGOLIN	AT-741-SERIES		C74, C66
00001523	ANTENNA - DME/TRANSPONDER	DORNE & MARGOLIN	DM NI 50		C74, C66a
00001524	ANTENNA - DME/TRANSPONDER	DORNE & MARGOLIN	DM NI7		C74, C66
00002555	ANTENNA COUPLER - HF	COLLINS	490S-1	\$17,277.00	
00002556	ANTENNA COUPLER - HF	COLLINS	AT-101M/102M	\$27,990.00	
00002557	ANTENNA COUPLER - HF	COLLINS	AT-107	\$31,974.00	
22101416	AUTOPILOT FLIGHT DIR SYS	COLLINS	FCS-700	\$158,745.00	
23001088	ELT	EMERGENCY BEACON	EBC 302-H	\$730.00	C91
23001089	ELT	ELT'S UNLIMITED	DEFT-1	\$415.00	C91
23001122	ELT	MARTECH	CIR-11-7	\$295.00	C91
23001123	ELT	MARTECH	EB-2BS MARLIN	\$2,400.00	C91
23001124	ELT	MARTECH	EAGLE	\$350.00	C91
23001125	ELT	MARTECH	EB-2EW DOLPHIN	\$690.00	C91
23001167	ELT	NARCO	ELT 10	\$325.00	C91
23001180	ELT	EMERGENCY BEACON	EBC 302-V	\$630.00	C91

GLOSSARY

- Attribute** - A characteristic of a relation which is also known as a data field or element. Each relation contains one or more related attributes. An attribute name is similar to a column heading in a table or a field in a file. See Appendix A for an alphabetical listing of the attributes according to the relation in which they belong.
- Database** - A collection of organized data.
- Relation** - A table or file within a database. The three relations of the Avionic Data Base are AVIONICS, MANUFACT and TSOREF. Refer to the description provided for each in Section 1.2 or for the exact contents and corresponding attribute names see Appendix A.
- Row** - The set of attribute values for a relation. A row is the same as a record in a conventional file system.
- Value** - A specific number, character, word, or set of words defined for an attribute. A set of values (one for each attribute) represents a row.

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