



**H.H. Arnold High School  
Electronics and Technology Education  
Frank C. Pendzich**

**ASSIGNMENT CHECK-LIST  
08/07/00**

Course # Course Title  
**TED303 Engineering Drawing**

Area Competency  
**Z DESIGN AND MODELING PROJECT - MODEL AIRPLANE**

| <u>Task</u> | <u>Task/Skill</u>                                       | <u>Started</u><br><u>mm/dd/yy</u> | <u>Completed</u><br><u>mm/dd/yy</u> |
|-------------|---|-----------------------------------|-------------------------------------|
| <b>1</b>    | <b>Model Airplane - CADDing the Delta Dart (Theory)</b> | ( / / )                           | ( / / )                             |

Once this task is complete, the student will identify the basic component parts of their model airplane project and define some basic aeronautical terms that are associated with fixed wing flight.

| <u>Sub</u> | <u>Init</u> | <u>Code</u>    | <u>Type of Task</u>        | <u>Task Description</u>              |
|------------|-------------|----------------|----------------------------|--------------------------------------|
| <b>a</b>   | ( )         | <b>Z1a</b>     | <b>Reading Assignment</b>  | Teaching With Model Airplane Program |
| <b>b</b>   | ( )         | <b>Z1b</b>     | <b>Reading Assignment</b>  | Assembly Instructions                |
|            |             | <b>Source:</b> | Delta Dart Instructions    |                                      |
| <b>c</b>   | ( )         | <b>Z1c</b>     | <b>Video Tape Inst.</b>    | Aerospace Fundamentals               |
|            |             | <b>Source:</b> | Aerospace Fundamentals     |                                      |
| <b>d</b>   | ( )         | <b>Z1d</b>     | <b>Homework Assignment</b> | Parts Identification Exercise        |
| <b>e</b>   | ( )         | <b>Z1e</b>     | <b>Homework Assignment</b> | Aeronautic Terms and Definitions     |
| <b>f</b>   | ( )         | <b>Z1f</b>     | <b>Computer Test</b>       | Aircraft Parts ID and Terms          |
| <b>g</b>   | ( )         | <b>Z1g</b>     | <b>Notebook</b>            | Notebook Review                      |

| <u>Task</u> | <u>Task/Skill</u>                   | <u>Started</u><br><u>mm/dd/yy</u> | <u>Completed</u><br><u>mm/dd/yy</u> |
|-------------|-------------------------------------|-----------------------------------|-------------------------------------|
| <b>2</b>    | <b>CADD - Horizontal Stabilizer</b> | ( / / )                           | ( / / )                             |

The student will measure and then CADD a 3D wire frame drawing and orthographic projection of the Delta Dart's Horizontal Stabilizer with its orientation - Skin TOP and Leading Edge RIGHT. Each drawing will be placed in an appropriate border. All component parts (Skin and Frame) and drawing elements will be grouped, on separate levels, labeled, and then color coded.

| <u>Sub</u> | <u>Init</u> | <u>Code</u> | <u>Type of Task</u> | <u>Task Description</u>                 |
|------------|-------------|-------------|---------------------|---|
| <b>a</b>   | ( )         | <b>Z2a</b>  | <b>Project</b>      | Horizontal Stabilizer - 3D Wire Frame   |
| <b>b</b>   | ( )         | <b>Z2b</b>  | <b>Project</b>      | Horizontal Stab. - Ortho. (Dimensioned) |

\_\_\_\_\_  
Lastname, First

\_\_\_\_\_  
Student Number

\_\_\_\_\_  
Period

*Subtasks are to be initialled by the instructor as they are completed. Indicate the task start and completion dates. Submit this form when each task is done.*

|                         |   |  |  |
|-------------------------|---|--|--|
| <u>Task</u><br><b>3</b> | <u>Task/Skill</u><br><b>CADD - Wing</b> | <u>Started</u><br><u>mm/dd/yy</u><br>( / / ) | <u>Completed</u><br><u>mm/dd/yy</u><br>( / / ) |
|-------------------------|---|--|--|

The student will measure and then CADD a 3D wire frame drawing and orthographic projection of the Delta Dart's wing with its orientation - Skin TOP and the Leading Edge RIGHT . The Wing must be configured in the delta position as described in the assembly instructions. Each drawing will be placed in an appropriate border. All component parts (Skin and Frame) and drawing elements will be grouped, on separate levels, labeled, and then color coded.

| <u>Sub</u> | <u>Init</u> | <u>Code</u> | <u>Type of Task</u> | <u>Task Description</u>                |
|------------|-------------|-------------|---------------------|--|
| a          | ( )         | <b>Z3a</b>  | <b>Project</b>      | Wing - 3D Wire Frame                   |
| b          | ( )         | <b>Z3b</b>  | <b>Project</b>      | Wing - Ortho. Projection (Dimensioned) |

|                         |  |  |  |
|-------------------------|--|--|--|
| <u>Task</u><br><b>4</b> | <u>Task/Skill</u><br><b>CADD - Motor Stick</b> | <u>Started</u><br><u>mm/dd/yy</u><br>( / / ) | <u>Completed</u><br><u>mm/dd/yy</u><br>( / / ) |
|-------------------------|--|--|--|

The student will measure and then CADD a 3D wire frame drawing and orthographic projection of the Delta Dart's motor stick with its orientation - Tapered End LEFT and BOTTOM. Each drawing will be placed in an appropriate border and all drawing elements will be on separate levels, labeled, and then color coded.

| <u>Sub</u> | <u>Init</u> | <u>Code</u> | <u>Type of Task</u> | <u>Task Description</u>            |
|------------|-------------|-------------|---------------------|------------------------------------|
| a          | ( )         | <b>Z4a</b>  | <b>Project</b>      | Motor Stick - 3D Wire Frame        |
| b          | ( )         | <b>Z4b</b>  | <b>Project</b>      | Motor Stick - Ortho. (Dimensioned) |

|                         |   |  |  |
|-------------------------|---|--|--|
| <u>Task</u><br><b>5</b> | <u>Task/Skill</u><br><b>CADD - Rudder</b> | <u>Started</u><br><u>mm/dd/yy</u><br>( / / ) | <u>Completed</u><br><u>mm/dd/yy</u><br>( / / ) |
|-------------------------|---|--|--|

The student will measure and then CADD a 3D wire frame drawing and orthographic projection of the Delta Dart's rudder with its orientation - Skin FRONT and the Leading Edge RIGHT. Each drawing will be placed in an appropriate border and all component parts (Skin and Frame) will be grouped, on separate levels, labeled, and then color coded.

| <u>Sub</u> | <u>Init</u> | <u>Code</u> | <u>Type of Task</u> | <u>Task Description</u>       |
|------------|-------------|-------------|---------------------|-------------------------------|
| a          | ( )         | <b>Z5a</b>  | <b>Project</b>      | Rudder - 3D Wire Frame        |
| b          | ( )         | <b>Z5b</b>  | <b>Project</b>      | Rudder - Ortho. (Dimensioned) |

|                         |   |  |  |
|-------------------------|---|--|--|
| <u>Task</u><br><b>6</b> | <u>Task/Skill</u><br><b>CADD - Propeller Assembly</b> | <u>Started</u><br><u>mm/dd/yy</u><br>( / / ) | <u>Completed</u><br><u>mm/dd/yy</u><br>( / / ) |
|-------------------------|---|--|--|

The student will measure and then CADD a 3D wire frame drawing and orthographic projection of the Delta Dart's propeller assembly with its orientation - Propeller Blade RIGHT. The propeller assembly consists of the Motor Stick Cap, Propeller Shaft, and Propeller Blade. Each drawing will be placed in an appropriate border and all component parts and drawing elements will be grouped (Cap, Shaft, and Blade), on separate levels, labeled, and then color coded.

|                 |                |        |
|-----------------|----------------|--------|
| Lastname, First | Student Number | Period |
|-----------------|----------------|--------|

*Subtasks are to be initialled by the instructor as they are completed. Indicate the task start and completion dates. Submit this form when each task is done.*

| <u>Sub</u> | <u>Init</u> | <u>Code</u> | <u>Type of Task</u> | <u>Task Description</u>                  |
|------------|-------------|-------------|---------------------|--|
| a          | ( )         | Z6a         | Tutorial            | CADD - The Delta Dart Propeller Assy.    |
| b          | ( )         | Z6b         | Project             | Propeller Assembly - 3D Wire Frame       |
| c          | ( )         | Z6c         | Project             | Prop. Assembly - Orthographic Projection |

| <u>Task</u> | <u>Task/Skill</u>                 | <u>Started</u><br><u>mm/dd/yy</u> | <u>Completed</u><br><u>mm/dd/yy</u> |
|-------------|-----------------------------------|-----------------------------------|-------------------------------------|
| <b>7</b>    | <b>CADD - Delta Dart Assembly</b> | ( / / )                           | ( / / )                             |

The student will assemble a series of pattern files to construct the completed Delta Dart model using CADD with the orientation of the aircraft - Rudder Tip TOP and the Propeller RIGHT. The completed CADD model of the Delta Dart includes the Horizontal Stabilizer, Wing, Motor Stick, Rudder, Propeller Assembly, and Propeller Belt. Each Drawing will be placed in an appropriate border and all component parts and drawing elements will be grouped, on separate levels, labeled, and then color coded.

| <u>Sub</u> | <u>Init</u> | <u>Code</u> | <u>Type of Task</u> | <u>Task Description</u>                |
|------------|-------------|-------------|---------------------|--|
| a          | ( )         | Z7a         | Project             | Propeller Belt - 3D Wire Frame         |
| b          | ( )         | Z7b         | Project             | Delta Dart - 3D Wire Frame             |
| c          | ( )         | Z7c         | Project             | Delta Dart - Ortho. (Basic Dimensions) |
| d          | ( )         | Z7d         | Project             | Delta Dart - Exploded View (Isometric) |

| <u>Task</u> | <u>Task/Skill</u>                          | <u>Started</u><br><u>mm/dd/yy</u> | <u>Completed</u><br><u>mm/dd/yy</u> |
|-------------|--|-----------------------------------|-------------------------------------|
| <b>8</b>    | <b>MODEL - Constructing the Delta Dart</b> | ( / / )                           | ( / / )                             |

The student will construct a model airplane from the set of CADD designs they produced. Once completed, the student will test and adjust the model for duration and high altitude flight. They will compete in head-to-head competition with other students to determine the quality of construction and efficiency of their model.

Distance: \_\_\_\_\_ Flight Time: \_\_\_\_\_

Flight Height: \_\_\_\_\_ Best of three attempts

| <u>Sub</u> | <u>Init</u> | <u>Code</u>                  | <u>Type of Task</u>                       | <u>Task Description</u> |
|------------|-------------|------------------------------|---|-------------------------|
| a          | ( )         | <b>Z8a</b><br><b>Source:</b> | <b>Project</b><br>Delta Dart Instructions | Horizontal Stabilizer   |
| b          | ( )         | <b>Z8b</b><br><b>Source:</b> | <b>Project</b><br>Delta Dart Instructions | Wing                    |
| c          | ( )         | <b>Z8c</b><br><b>Source:</b> | <b>Project</b><br>Delta Dart Instructions | Rudder                  |
| d          | ( )         | <b>Z8d</b><br><b>Source:</b> | <b>Project</b><br>Delta Dart Instructions | Motor Stick             |

\_\_\_\_\_  
Lastname, First

\_\_\_\_\_  
Student Number

\_\_\_\_\_  
Period

*Subtasks are to be initialled by the instructor as they are completed. Indicate the task start and completion dates. Submit this form when each task is done.*

| <u>Sub</u> | <u>Init</u> | <u>Code</u>                  | <u>Type of Task</u>                       | <u>Task Description</u>               |
|------------|-------------|------------------------------|---|---------------------------------------|
| e          | ( )         | <b>Z8e</b><br><b>Source:</b> | <b>Project</b><br>Delta Dart Instructions | Propeller Assembly and Belt           |
| f          | ( )         | <b>Z8f</b><br><b>Source:</b> | <b>Project</b><br>Delta Dart Instructions | Delta Dart Assembly                   |
| g          | ( )         | <b>Z8g</b><br><b>Source:</b> | <b>Project</b><br>Delta Dart Instructions | Flight Testing and Adjustment         |
| h          | ( )         | <b>Z8h</b>                   | <b>Project</b>                            | Painting and Detailing                |
| i          | ( )         | <b>Z8i</b>                   | <b>Project</b>                            | Flight Height and Duration Assessment |

\_\_\_\_\_  
 Lastname, First

\_\_\_\_\_  
 Student Number

\_\_\_\_\_  
 Period

*Subtasks are to be initialled by the instructor as they are completed. Indicate the task start and completion dates. Submit this form when each task is done.*