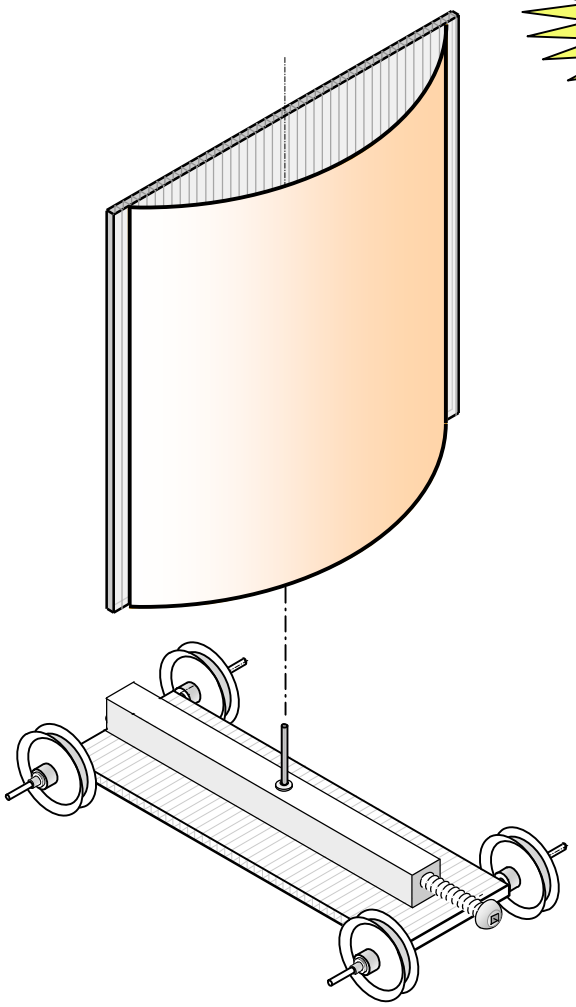
centre de développement pédagogique
pour la formation générale en science et technologie

Working document

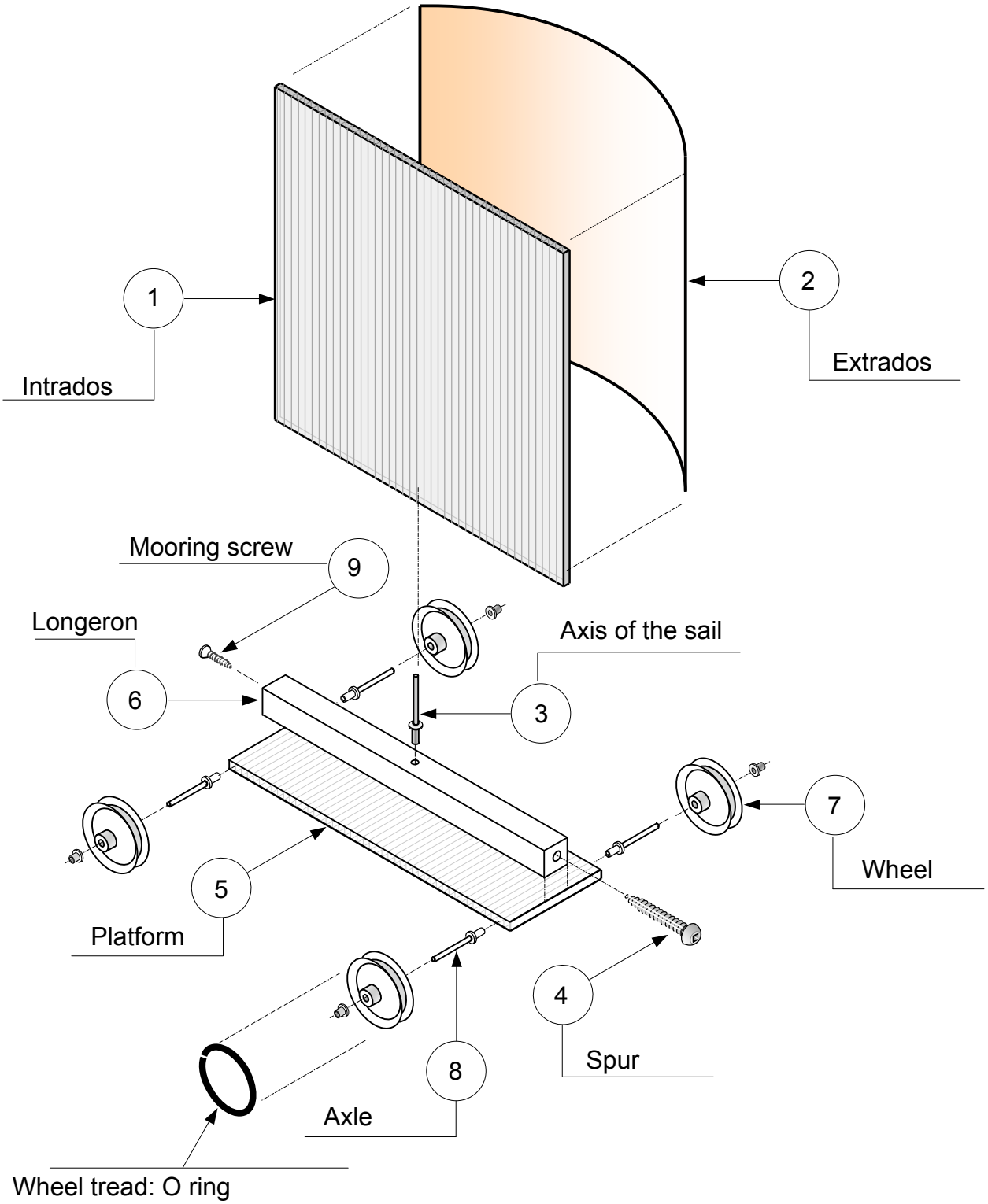
TECHNICAL FILE FOR AEOLUS' CHARIOT

This technical file is intended for the teaching or technical personnel.

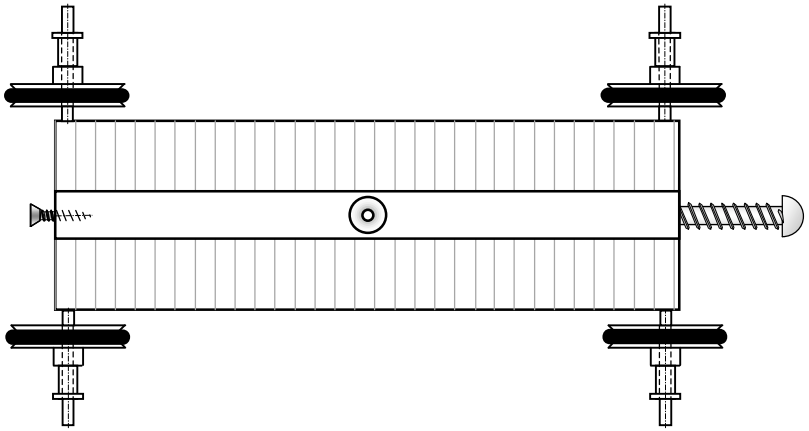


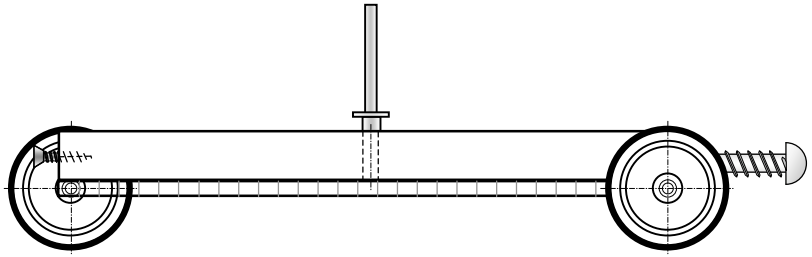
AEOLUS' CHARIOT (simplified LES)

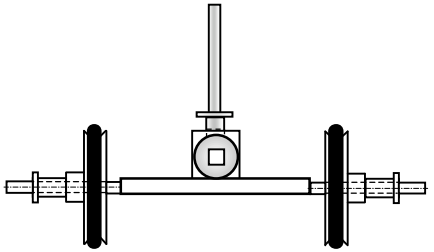
January 2012



centre de développement pédagogique *pour la formation générale en science et technologie*	ACTIVITY: **AEOLUS' CHARIOT** (Simplified LES)		
	TITLE: **EXPLODED VIEW OF AEOLUS' CHARIOT**		
	DATE: **08 NOV. 2010**	SCALE: **1 :1**	DRAWING: **N°1**







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ACTIVITY:	**AEOLUS' CHARIOT** (Simplified LES)			
TITLE:	**CHARIOT SUB-SET DRAWING**			
DATE:	**08 NOVEMBER 2010**	SCALE:	**NOT TO SCALE**	DRAWING: **N^{o} 2**

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FABRICATION AND ASSEMBLY RANGE

ELEMENT: **AEOLUS' CHARIOT**

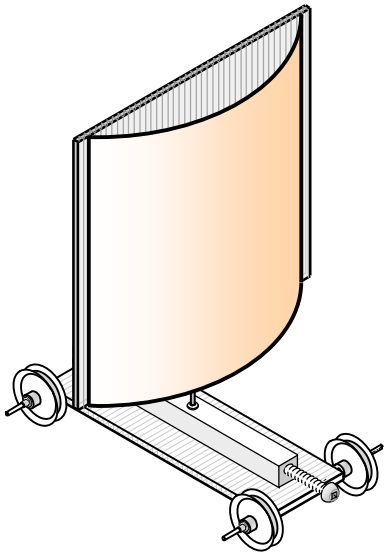
SET: "AEOLUS' CHARIOT" LES

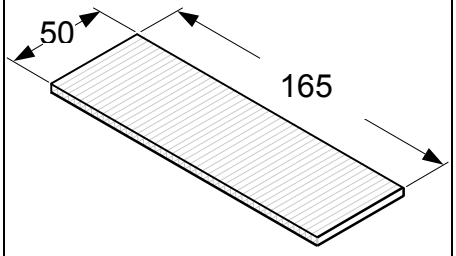
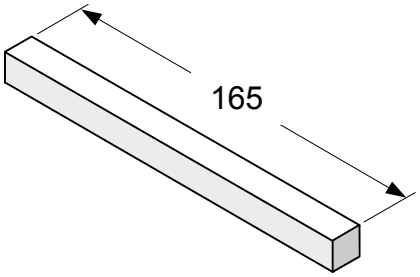
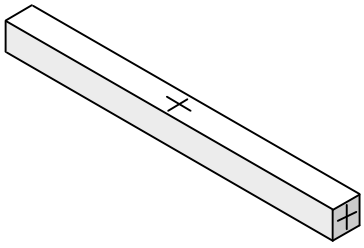
RANGE: **1**

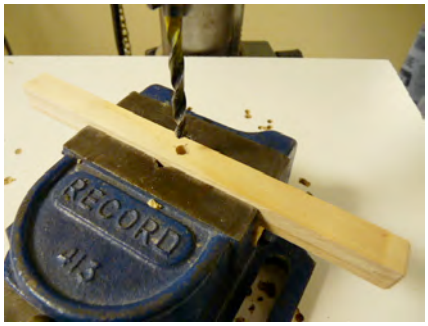
SHEET: **1 of 7**

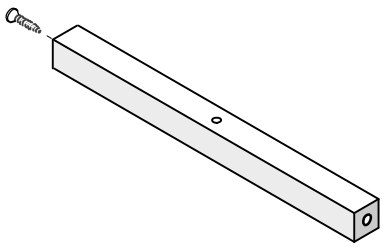
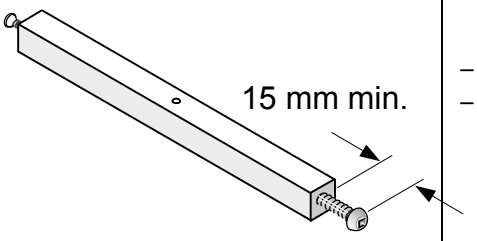
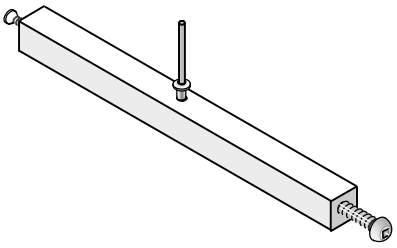
MATERIALS: **Various**

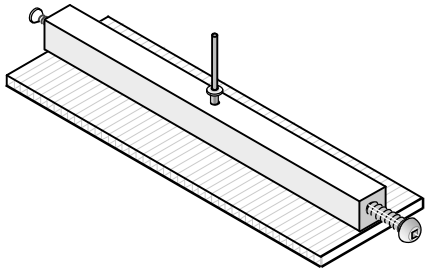
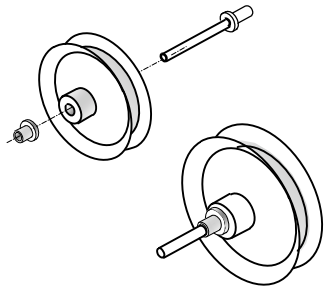
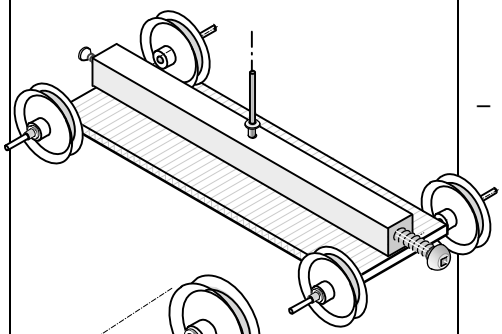
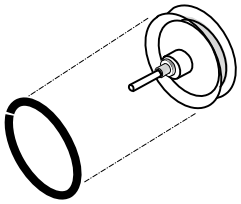
NUMBER: **1**

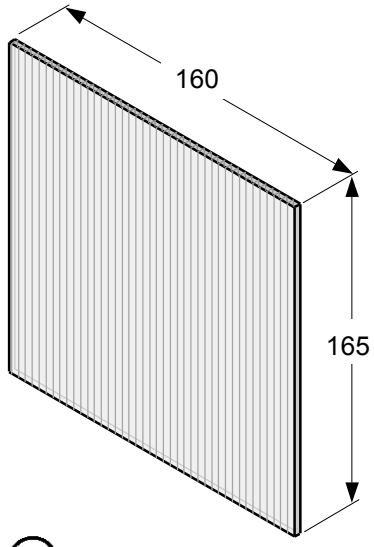
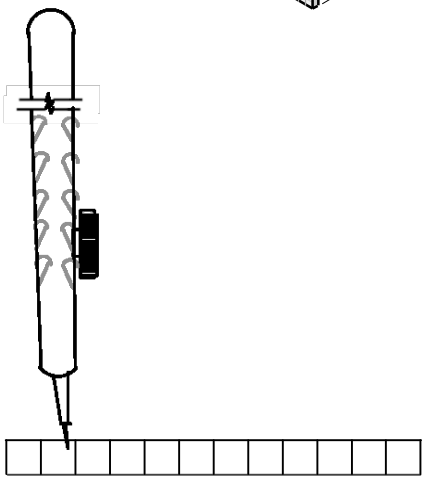
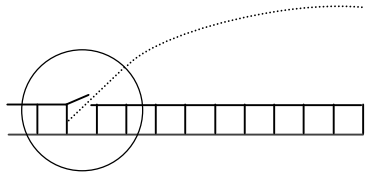
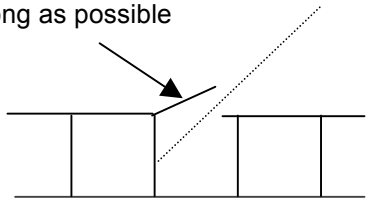


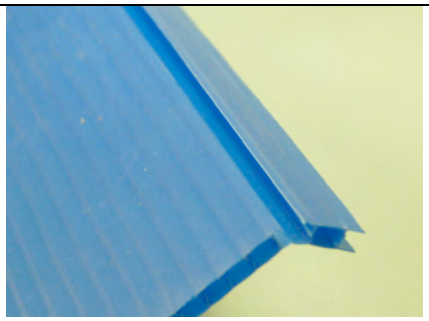
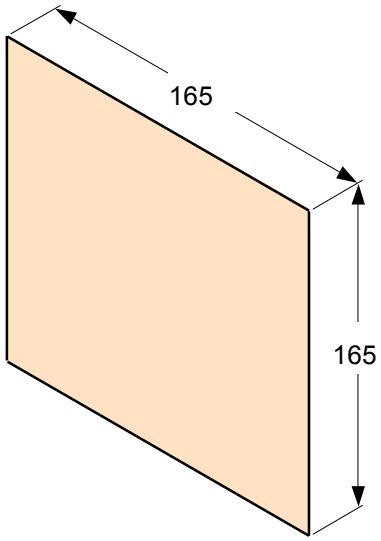
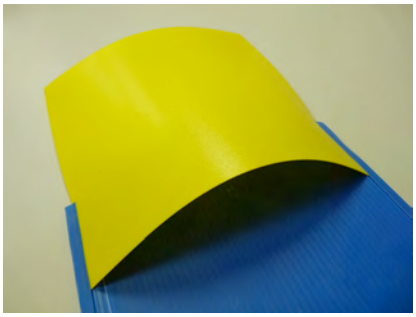
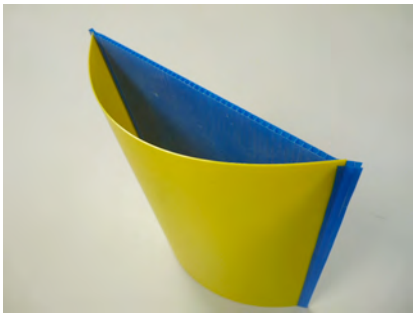
N°	PHASE, SUB-PHASE OR OPERATION	PHOTO OR DRAWING	MACHINE-TOOL, TOOLS
10	**PLATFORM**		
11	In a 4 mm thick piece of "Coroplast", cut out a 50 mm X 165 mm piece as shown. **<u>NOTE</u>: Ensure that the fluting is parallel to the width of the part.**		– Pencil – Ruler – Utility knife – Safety ruler
20	**LONGERON**		
21	Using a mitre box, cut a 165 mm length in a 12.5 mm x 12.5 mm section of a pine strip.		– Pencil – Ruler – Mitre box – Hand saw
22	Mark and punch the center of the holes at each end, as well as in the middle of the longeron.		– Pencil – Ruler – Punch – Hammer

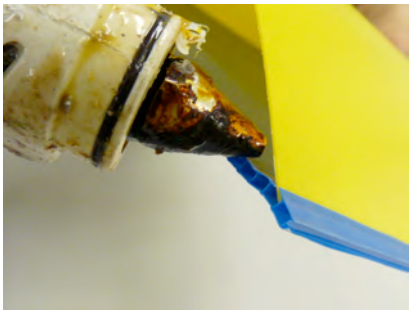
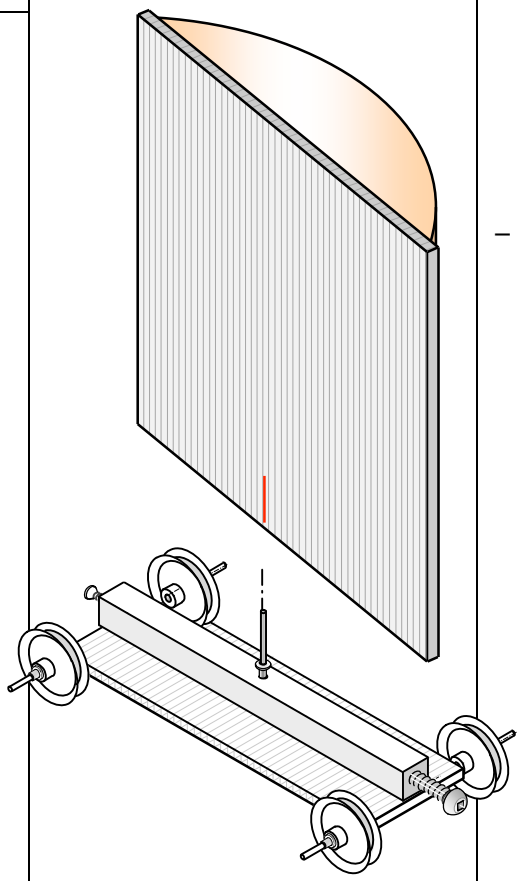
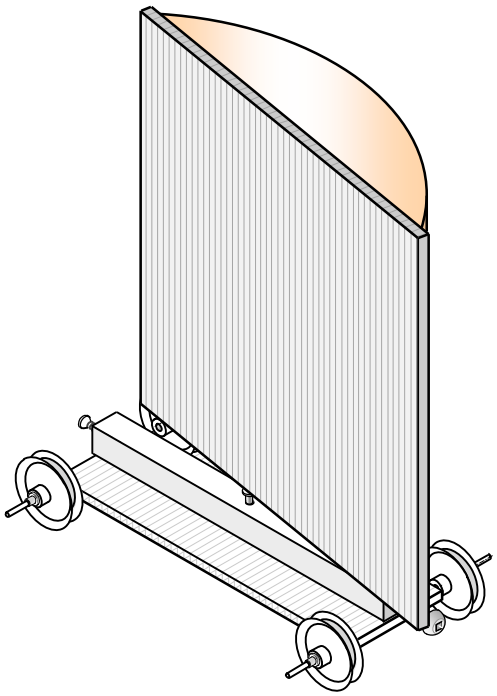
23	Place the longeron in a drill vise and drill the 5 mm (3/16 in) diameter hole.		– Drill – 5 mm (3/16'') Ø bit – Drill vise
24	Pilot-hole a 3.5 mm (9/64") diameter hole, 10 mm deep in one of the extremities. This hole will hold the spur (n° 10 - 1" screw).		– Drill – 3.5 mm (9/64'') Ø bit – Drill vise
25	Pilot-hole a 2 mm (5/64") diameter hole, in the other extremity, to hold the n°6 - 3/4" screw.		– Drill – 2 mm (5/64'') Ø bit

30	**ASSEMBLY LONGERON - SPUR**		
31	Screw in the n°6 – ¾ in. screw.		– Screwdriver – n°6 – ¾ in. counter sink screw
32	Screw in the n°10 - 1 in. screw Leave the screw extended by at least 15 mm.		– Screwdriver – n°10 - 1 in. counter sink screw
33	Insert the rivet into the longeron.		– 3/16 in X ½ in rivet
	<u>NOTE</u>: Place the rivet in a vise and force it onto the longeron until the head of the rivet is flush with the hole.		– Vise – Hammer

40	**ASSEMBLY PLATFORM - LONGERON**		
41	Using a hot glue gun, affix the longeron to the platform, taking care to center it.		– Pencil – Ruler – Hot glue gun
50	**WHEELS**		
51	Insert a 3/16 X ½" rivet in a 30 mm Ø plastic pulley, holding it with a plastic reducer tip. **<u>Note</u>: You may need to crimp the tip so that it holds the wheel adequately in place.** Repeat this operation 4 times. **<u>NOTE:</u> The pulley will be free to rotate and the rivet head will serve as the wheel axle.**		– 3/16 x ½ in. rivets – Reducer tips (available with gear sets) – Electrician's pliers
52	Place the wheels in the fluting of the "Coroplast" and check that the vehicle moves freely. **<u>NOTE</u>: See drawing N° 2 for wheel positioning.**		– **Drawing N° 2**
53	Add an O-ring to each of the wheels.		– 24 mm x 32 mm x 4 mm O-rings

FABRICATION AND ASSEMBLY RANGE OF THE CHARIOT			SHEET: **5 of 7**
N°	**PHASE, SUB-PHASE OR OPERATION**	**PHOTO OR DRAWING**	**MACHINE-TOOL, TOOLS**
60	**SAIL (INTRADOS)**		
61	Cut out a 160 mm. X 165 mm. piece in a 2 mm. thick sheet of "Coroplast". **<u>BE CAREFUL</u> of the direction of the fluting. It must be in the direction of the height of the part.**		– Pencil – Ruler – Utility knife – Safety ruler
62	Slit the first layer of the second flute	  As long as possible 	– Utility knife – Safety ruler

FABRICATION AND ASSEMBLY RANGE OF THE CHARIOT			SHEET: **6 of 7**
N°	**PHASE, SUB-PHASE OR OPERATION**	**PHOTO OR DRAWING**	**MACHINE-TOOL, TOOLS**
63	Repeat the operation at the other end.		– Utility knife – Safety ruler
70	**SAIL (EXTRADOS)**		– Pencil – Ruler – Utility knife – Safety ruler
71	Cut a 165 mm X 165 mm piece in a 0.5 mm thick vinyl.		
80	**ASSEMBLING THE SAIL**		
81	Gently insert the vinyl (extrados) into the two slits in the "Coroplast" (intrados) and slowly slide it up.		

FABRICATION AND ASSEMBLY RANGE OF THE CHARIOT			SHEET: **7 of 7**
N°	**PHASE, SUB-PHASE OR OPERATION**	**PHOTO OR DRAWING**	**MACHINE-TOOL, TOOLS**
82	Solidify the extrados with a drop of hot glue at each corner. **<u>NOTE</u>: It is possible to use adhesive tape to affix the extrados to the intrados.**		– Hot glue gun
90	**ASSEMBLY SAIL - CHARIOT**		
91	Mark the middle of the sail and insert it onto the rivet (sail axle).	 	– Pencil