TECHNICAL SPECIFICATIONS FOR MAIL TROLLEYS

1 BASIC SPECIFICATION

1.1 Configuration (refer to Appendix C: Annex A)

The trolley shall have the following overall dimensions:

- a) Length: 108" (2743mm)
- b) Width: 62" (1575mm)
- c) Height: 76" (1930.4mm) Center (Both sides 74")
- d) Ground to floor bed height: 24" (610mm)

2 MAIN FUNCTION

2.1 To be used for transportation of baggage with a minimum payload of 2000kg.

3 GENERAL REQUIREMENTS

3.1 Suitable for rugged outdoor airport operations.

4 SAFETY

- 4.1 Brake effectively applied with its tow bar either in the dropped position or locked in the upright position.
- 4.2 The tow bar should be lockable in the vertical position means of 'catch unit' a slipover hook offering positive locking. The slip hook shall be of robust construction of steel plate 0.5" (13mm) thick. Refer to Annex B
- 4.3 The brakes shall be effective to stop a fully loaded trolley let loose at 25kmph down a gradient of 1:20 within a distance of 20 meters.
- 4.4 Light reflectors (to be approved by SAS) are to be mounted on the front and rear ends of the trolley.

5 CHARACTERISTICS

- 5.1 General
- 5.1.1 The trolley shall be capable of being pushed by a single operator with 2000kg load on board and tow by a tractor singly or in a train of up to 4 trolleys.
- 5.1.2 Static load of 2000kg to be transported by the trolley at 30 kmph.
- 5.1.3 Tow bar handle must be added.
- 5.2 Brake System
- 5.2.1 Mechanical brakes shall be provided for the front wheels with the actuator located at the front tow bar frame work of the trolley and be effective to prevent the movement of the trolley should the trolley be detached from the towing tractor. Refer to annex B.
- 5.2.2 Friction plate with 2 sets of spring washers and nuts and 2" (51mm) clearance between tyre and steering frame. To weld wedges to brake holder.
- 5.2.3 Brake linkage shall be protected during forklift handling. The linkage turnbuckle can be welded so that one end needs only to be adjusted.
- 5.2.4 The trolley shall be fitted with a wagon-type tow bar pivoted on a turntable of 650mm OD. The tow bar shall be pivoted to allow vertical up of 110 degrees from the horizontal position. Refer to Annex B.
- 5.2.5 Space in the tow-bar yoke filled by welded flat bar.
- 5.2.6 Pivot bars shall be 1.25" (32mm) diameter and welded with a washer on one end with a split pin-locking device at the other end.
- 5.2.7 Bolts and nuts of the turntable shall be spot-welded.
- 5.2.8 The end of the brake lever welded to the tow bar round pipe shall be rounded to ensure good lift.
- 5.2.9 The brake shaft shall be 1.25" (32mm) diameter bright mild steel and the brake shaft holder shall be full length x 2. Refer to Annex B.

- 5.3 Axles
- 5.3.1 All the wheels are to be independently mounted and the mounting unit shall be approved by SAS prior to installation. Tyres are to be solid cushioned (400 x 8) type with a 6-stud brakeless rim and hub. Refer to Annex C.
- 5.3.2 The wheels shall not protrude from the sides of the body.
- 5.3.3 2" diameter stub axles are to be welded to the end of 50 X 50 X 5mm) square tube.
- 5.4 Tow Bar and Towing Assembly
- 5.4.1 The trolley shall be equipped with a spring-loaded towing hitch fitted at the rear to enable the linking of several trolleys during towing operation. The towing hitch and the tow bar should allow 4 fully loaded mail/baggage trolleys or container trailers or their combinations to be safely towed by tractors. Refer to Annex D.
- 5.4.2 The tow pin shall not be removable from the tow bracket. The tow pin handle must be able to rest on a handle rest bracket as shown in the attached drawing. Refer to Annex D.
- 5.4.3 The bracket shall be braced from the back by an angle stiffener to the square axle tube.
- 5.4.4 The minimum towing height shall be 13" (330mm) from the ground level.
- 5.4.5 The dimension of the towing hitch and tow bar are to be verified and confirmed by the contractor and SAS through measurement surveys conducted on existing towing vehicles belonging to SAS.
- 5.5 Body and Framework
- 5.5.1 The skeleton shall be of channel profile, 75 X 40 X 5mm with 2 inner pieces running length-wise to support forklift handling.
- 5.5.2 All body panels including the roof shall be made from 1/8" (2mm) thick mild steel plate.

- 5.5.3 The roof panel shall be made from single (1pc roof) mild steel sheet of 3mm thickness. To prevent water retention, the roof shall be inclined from the front to the rear of the trolley.
- 5.5.4 The Trolley shall be covered on all sides except the left side shall have two sliding doors. The sliding doors shall slide on rollers. There should be sufficient rollers to provide adequate support and ensure smooth operation of the doors. Refer to Annex E & To view on site.
- 5.5.5 The floor bed shall be made from a 3/16" (5mm) galvanized mild steel checker plate and spot-welded to the undercarriage cross channels.
- 5.5.6 The 2 front top corners shall be fitted with 2" (51mm) "D" rubber bumpers which are held in place by brackets fully welded to the body of the trolley. The four top corners shall be rounded shape See Annex E.
- 5.5.7 The trolley shall have two viewing windows at the right side & rear to allow the contents to be seen from the outside the Trolley when it is locked. Refer to Annex E.
- 5.5.8 The windows shall be made of 6mm transparent LEXAN XL sheet.
- 5.5.9 The window framework should be so constructed that it shall be:
 - A. Leak-proof: rainwater should not be able to leak into trolley and damage the contents within the trolley.
 - B. Impact-proof: the panels should not be easily damaged under normal operation.
 - C. Tamper-proof: the panels should not be easily tampered with to allow the contents to be removed from the trolley.

6 Document Pocket

6.1 The document pocket shall be retrofitted at front left side. Refer to Annex F.

7 IDENTIFICATION

- 7.1 Identification number and tare weight painted on the front and back panels of the trolleys as well as welded on the tow bar bracket.
- 7.2 Finishing colour shall be as per sample given.

8 ITEMS TO BE SUPPLIED

- 8.1 The supplier shall supply the following items:
- 8.2 Parts Manual 4 sets and PDF
- 8.3 Repair Manual 4 sets and PDF

9 PAINTING

- 9.1 The steel portion of the trolley other than its side shall receive as a minimum the following treatment:
- 9.2 Powered tool brushing to remove all scale, grease and dirt.
- 9.3 One coat water-based primer paint (minimum 2 coats after drying).
- 9.4 Two coats of gloss enamel finish paint.
- 9.5 The roof need only be painted with white water-based primer.

10 ACCEPTANCE TESTING

10.1 The contractor shall perform all necessary inspection and test to demonstrate that the trolley meets all these specifications with records and reports approved by SAS. The contractor shall provide adequate personnel to assist SAS to inspect and test the trolley in Singapore Changi Airport.

11 FINAL ACCEPTANCE

- 11.1 Final acceptance of the trolley shall be made only after the following conditions have been met.
- 11.2 The trolley has been successfully tested as specified.
- 11.3 The trolley has been operated by SAS for a period of one calendar month and it has not shown any failure, irregular operation or abnormal wear.

12 OTHERS

- 12.1 Red loctite 271 must be applied during fastening of the wheel hub.
- 12.2 PE Certification of Maximum Load Capacity of Mail trolley 2 tons.
- 12.3 Manufacturer to provide Warranty period of equipment and parts.
- 12.4 12 months of warranty for equipment and parts