For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Airbus Industrie A319, A320 and A321 Series Aeroplanes

AD/A320/187          Nose Landing Gear Steering          1/2006


This Airworthiness Directive (AD) is not applicable to aircraft that have been delivered and equipped with BSCU standard L4.8 from production incorporating modification 35216.

Requirement: 1. The following operational procedure is only for those aircraft that have not incorporated AIRBUS modification 31152 in production (i.e. applicable only to aircraft with the steering powered by the green hydraulic system).

Incorporate the following into in the Aircraft Operations Manual, or AFM TR 4.02.00/33 for aircraft without FWC H2E3P or H1E3P or subsequent standard, or TR 4.02.00/34 for aircraft with FWC H2E3P or H1E3P.

The ECAM message, in case of a nose wheel steering failure, will be worded as follows:

- “WHEEL N/W STRG FAULT” for aircraft with FWC software post E3P
- “WHEEL N.W STEER FAULT” for aircraft with FWC software pre E3P

If the L/G SHOCK ABSORBER FAULT ECAM caution is triggered at any time in flight, and the WHEEL N/W STRG FAULT ECAM caution is triggered after the landing gear extension:

- When all landing gear doors are indicated closed on ECAMWHEEL page, reset the BSCU:
  - A/SKID&N/W STRG--------------------------OFF THEN ON
- If the WHEEL N/W STRG FAULT ECAM caution is no longer displayed, this indicates a successful nose wheel re-centering and steering recovery.
  - Rearm the AUTO BRAKE, if necessary.
• If the WHEEL N/W STRG FAULT ECAM caution remains displayed, this indicates that the nose wheel steering remains lost, and that the nose wheels are not centered.

- During landing, delay nose wheel touchdown for as long as possible.

- Refer to the ECAM STATUS

➢ If the WHEEL N/W STRG FAULT ECAM caution appears, without the L/G SHOCK ABSORBER FAULT ECAM caution:

- No specific crew action is requested by the WHEEL N/M STRG FAULT ECAM caution procedure.

- Refer to the ECAM STATUS

2. Check the NLG strut inflation pressure, weight off and weight on wheels, in accordance with AIRBUS Aircraft Maintenance Manual (AMM) 12-14-32 and its associated TR issued on 13 November 2005; and

Perform a one time boroscopic inspection of the NLG upper support (backplate) to detect anti-rotation lugs ruptured (completely broken), in accordance with AIRBUS Technical Note 957.1901/05, dated 18 October 2005; and

Report the results of all inspections to AIRBUS.

3. If any upper support anti-rotation lugs are found ruptured (completely broken), carry out all necessary actions to get a serviceable NLG (contact AIRBUS Fax: 33 5 61 93 32 73).


Compliance:

1. From the effective date of this AD.

2. Within 100 flight cycles following an ECAM caution ‘L/G SHOCK ABSORBER FAULT’ associated with at least one of the following Centralised Fault Display System (CFDS) messages:

‘N L/G EXT PROX SNSR 24GA TGT POS’,

‘N L/G EXT PROX SNSR 25GA TGT POS’,

‘N L/G SHOCK ABSORBER FAULT 2526GM’.

3. Before further flight
This Airworthiness Directive becomes effective on 5 December 2005.

Background: An event where an A320 landed with the Nose Landing Gear (NLG) wheels rotated at 90 degrees to the aircraft centreline was recently reported.

Investigation showed that the upper support of the NLG shock absorber was damaged and the anti-rotation lugs were ruptured. This led the nose wheels to lose their centered position reference normally ensured by the shock-absorber cams. The BSCU had logged a steering system fault, because hydraulic power was not available at the time of steering system checks, therefore the BSCU was not able to proceed with the re-centering of the wheels.

To prevent reoccurrence of landings with the NLG turned 90 degrees, this AD introduces operational procedures and maintenance actions.

James Coyne
Delegate of the Civil Aviation Safety Authority

23 November 2005