

# NATIONAL INTERAGENCY FIRE CENTER

3833 South Development Avenue  
Boise, Idaho 83705



9216 NFES (FA240)  
August 10, 2004

## National Fire Equipment System Cache Memorandum No. 04-3



To: NFES National Incident Support Caches

From: Paul Naman, NFES Representative

Subject: Cargo Swivel Retrofit Project



Recent quality control complaints have identified failures of the spring gates on old style (pre-1992 models) 3000 lb cargo swivels (NFES #0526) resulting in the inadvertent release of several sling loads during fire suppression operations. These complaints prompted a review of the various cargo swivel designs currently in use in order to resolve these concerns.



In the early 1990's, the San Dimas Technology and Development Center (SDTDC) evaluated and subsequently recommended a change in the hook design installed on the 3000 lb cargo swivel hook. The typical old style design included a hook with a spring returning gate (see figure 1). Other variations of the old style design can be seen in Attachment 1. The new design uses the gate as part of the load-suspending system through a hinge with the hook part, see figure 2. The improved hook was added to the cargo swivel and the cargo swivel hook assembly has been procured in this configuration since that time.



Figure 1 – Spring Hook



Figure 2, Load Closing Hook

Replacement due to attrition was the intended process for the “phasing out” of the older spring gate swivels, but this method does not appear to be working. A significant number of older swivels still exist within the cache system and the aviation community due to the robustness of the overall design.

In order to maximize the investment in the older swivels and to take advantage of their inherent durability, the possibility of retrofitting older swivels with the new load closing hooks was investigated. These efforts were successful and have resulted in the establishment of a four-year contract for the retrofit of the old hooks to the newer load closing hook design. Although there are several variations and differing manufacturers of the older spring gate sling swivel, the hook retrofit is compatible with all known patterns of the spring gate design. Retrofitted swivels will be in an “as new” condition in regard to expected service life and function.

SDTDC will be responsible for all aspects of contract administration for this retrofit project, including the coordination of all related shipping and receiving operations, billing and collection of funds for contract payments, and for providing overall technical oversight. Special funding is not being provided so the cost of the retrofit conversions and initial shipping to SDTDC will be the responsibility of respective sling swivel owners. The price for retrofit of each swivel is dependent upon several factors including the type and quantity being refitted. See Attachment 2 for the detailed pricing structure. Spring gate type swivel assemblies should be sent directly to SDTDC at the following address:

San Dimas Technology & Development Center – Attn: Carl Bamberger  
444 East Bonita Ave.  
San Dimas, Calif. 91773

Include with each shipment a completed copy of the “3,000 Pound Helicopter Swivel Hook Retrofit Information” form (Attachment 3) which will ensure all required contact and financial information is provided. This form is also available at <http://www.fs.fed.us/t-d/>. Both the user name and password for this site is “t-d”. Once logged in select “Resource Topics” and then “Aviation”. SDTDC will inspect all spring gate swivels it receives to first determine suitability for retrofit based on the degree of wear or damage present. The extent of work required for retrofit worthy swivels will be assessed and specific retrofit cost totals will be determined. SDTDC will then contact owners with disposition and cost/billing information. Retrofit processing times may vary, but an eight week turn-around time should be anticipated. SDTDC will assume shipping costs for returning retrofitted swivels to the original shipping location.

Spring gate type swivel assemblies will be accepted for retrofit until September 1, 2007. Ample time is being provided to accomplish the retrofit since the reported occurrence of dropped loads due to spring gated swivels has been determined to be insufficient to identify this problem as a major safety issue. Managers responsible for equipment should make an inventory of their equipment and establish a reasonable schedule for retrofitting their existing swivels to meet the September 2007 deadline. Old style swivels found in use after this deadline shall be removed from the system and scrapped.

If you have any questions or comments regarding the sling swivel retrofit project please contact Dave Haston, SDTDC at (909) 599-1267 ext 294 or Carl Bambarger, SDTDC at (909) 599-1267 ext 253.

/s/ Paul E. Naman

cc:

State Fire Management Officers - BLM  
Regional Directors Fire and Aviation Management - USFS  
Technology Development Centers - San Dimas, Missoula  
Agency Directors - NIFC  
Logistics Center - NICC  
Ray Balli - GSA  
Tory Henderson - USFS





Old Style Spring Hooks

There are three retrofit line items of work to the contract.

The first line item is the retrofit of the hook from the spring gate hook to the self-closing under load style hook that has been procured over the last 10 years.

The second line item is replacement of the link. This is not normally expected to be done, but if the swivel's link is under sized or in unacceptable shape it will be replaced.

The third item is the replacement of the link attachment device. Some swivels in the past have been delivered with cotter pins and other "safety" devices that provide sharp points or catch hazards. These attachments will be replaced with better fastener systems.

The prices for retrofit are provided by fiscal year and based on quantity.

Line Item 1 – Hook Retrofit				
	Price per each			
Quantity	FY04	FY05	FY06	FY07
1 to 99	\$93.62	\$102.05	\$109.14	\$122.24
100 to 999	\$90.90	\$99.15	\$106.00	\$118.78
1000 +	\$88.32	\$96.26	\$102.96	\$115.32
Line Item 2 – Link Replacement				
Quantity	FY04	FY05	FY06	FY07
1 to 49	\$11.00	\$11.88	\$13.30	\$14.90
50 to 399	\$10.69	\$11.54	\$12.93	\$14.98
400 +	\$10.38	\$11.21	\$12.55	\$14.06
Line Item 3 – Link Fastener Attachment Replacement				
Quantity	FY04	FY05	FY06	FY07
Any	\$6.73	\$7.21	\$8.06	\$8.06

