AIRCRAFT SERVICE EQUIPMENT | Established 1943

Juniper news

The newsletter of **A.T.Juniper (Liverpool) Limited** | SPRING 2010

INSIDE

- Training and Commissioning
- Inhibiting adaptors
- Helping keep a Spitfire airborne
- ***ENGINE WASH PROBES SPECIAL*** Full probe list and fitting instructions
- Full customer list and world map
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- Why use Juniper..?
- Juniper and the Dreamliner
- SAAB chooses Juniper

COVER STORY > *The new containment mat in position for an engine wash at TAM Linhas Aereas, San Paulo, Brazil.*

Juniper's new trailer mounted KYOTO containment mat.

Engine wash waste water collection

Our new self contained trailer mounted Kyoto Containment Mat (JMP/KYOTO/D/6777/C200) is now available and features a high-powered vacuum unit discharging into a cavernous 87 gallon onboard storage tank powered by a 36 volt battery giving over 3 hours continuous operation before recharging is required.

TAM Linhas Aereas have ordered four of these rigs and the first of them is shown here in action during a wash on a V2500 engine fitted to an Airbus A320 at The Jardim Aeroporto, San Paulo, Brazil in February of this year.

Embodying all the traditional Juniper virtues of rugged build quality, ease of use and unrivalled back-up and expertise, the Trailer Mounted Kyoto Containment Mat might just be what you need for your next engine wash.

JMP/KYOTO/D/6777/C200

More photos of the new containment mat during a night time wash by TAM Linhas Aereas on a V2500 engine fitted to an Airbus A320 at The Jardim Aeroporto, San Paulo, Brazil in February of this year.

JMP/KYOTO/D/6777/C200

features and benefits

- *Totally self contained*
- *Stowable polyurethane containment mat measuring 35' x 12' stored on a powered reel*
- *Integral 87 gallon stainless steel storage tank*
- *Powerful vacuum unit with flexible hose and nozzle assembly*
- *36v battery giving up to 3 hrs continuous operation*
- *Battery charger supplied*
- *Towable, compact and maneuverable*
- *6 x portable weights for anchoring mat in windy conditions*

Training & Commissioning

JMP/LUFT/D/4972/C500

JorAMCO - November 2009

November 2009 saw Steve Marshall visiting Queen Alia International Airport in Jordan to commission a 2x50 gallon rig **(JMP/LUFT/D/4972/C500)** bought by JorAMCO. The training wash was carried out on the TRENT 772 engines fitted to a Thomas Cook Airbus A330-200 using the Juniper TRENT 772 short probes **(JMP/TRENT/D/4702)**.

A good training session was followed by excellent engine washes with the rig and tooling performing well.

JMP/CFM56/D/4777/C200

Air Italy - March 2010

In March this year Steve Marshall travelled to Aeroporto Di Milano - Malpensa to commission a 2x25 rig **(JMP/CFM56/D/4777/C200)** bought by Air Italy and give training to the ground support staff who would be using it. Following a ½ hour training session around the rig a wash was carried out on a CF6-80C2 engine fitted to a Boeing 767-200 aircraft using our CF6-80C2 short probes **(JMP/CF6/D/4037)** and everyone declared themselves happy with the result, commenting on how easy the Juniper rig was to use.

JMP/GEM/D/6310/C300

Spitfire takes to the air

Rolls Royce own and operate Supermarine Spitfire No. PS853 through their Corporate Heritage Department in Filton, Bristol.

Spitfire PS853 is powered by a Griffon V-12 engine and after storage through the winter months the crankshaft will be primed with oil using a 19ltr. Juniper oil dispensing rig **(JMP/GEM/D/6310/C300)**. This rig has been converted for the task from our popular 'Gem' inhibiting rig originally developed for the Rolls Royce Gem engine. We are proud of the small part we play in keeping a valuable part of our aviation history airborne.

Spitfire PS853, now civil registered as G-RRGN, in a wonderfully atmospheric photo courtesy of Stephen Fox.

Juniper Sales

Since March of 2009 one hundred and twenty new machines have been delivered to customers all over the world.

- ***68 Compressor Washing Rigs***
- ***8 Industrial Compressor Washing Rigs***
- ***14 Foaming Rigs***
- ***5 Oil Replenishment Rigs***
- ***15 Oleo Charging Rigs***
- ***4 Inhibiting Rigs***
- ***1 Flushing Rigs***
- ***5 Containment Mat Systems***

Wizz Air find Juniper so Adaptable...

JMP/GEM/D/6310/C200

Juniper inhibiting rigs range in size from a small and maneuverable 19ltr. right up to 250 ltrs., so when Wizz Air in Hungary needed an inhibiting rig for their V2500 engines they turned to Juniper for help and we have now supplied them with our versatile 19ltr. rig **(JMP/GEM/D/6310/C200)**, together with a specially designed adaptor **(JMP/V2500/C/6831)** enabling connection to the V2500.

Similar adaptors have already been developed for the RB211-534E4 **(JMP/RB211/A/6779)** and CFM56-3 **(JMP/CFM56/A/6780)** engines and we would be happy to develop others should they be required.

Juniper worldwide

Juniper now deals with **360** aviation customers worldwide

A.W. Developments
ACTS Aero Technical Support & Services
Aer Lingus
Aerocontractors Company of Nigeria Ltd.
Aeromexico
Aeromexico Connect (Aeroliteral)
Aerosafe Products
Aerosvit-Ukranian Airlines
Aerotechnik Anhalt
AGSE
Air Algerie
Air Arabia
Air Astana
Air Atlanta Aero Engineering Ireland
Air Atlantique
Air Berlin
Air Bridge Carriers Ltd.
Air Canada
Air Caraibes
Air Deccan (India)
Air Europa (Mallorca)
Air France
Air Hansen
Air India
Air Italy S.p.A.
Air Jamaica
Air Luxor (now Hifly)
Air Madrid
Air New Zealand
Air One
Air Pacific Ltd.
Air Transat
Air Transport International
Air UK Engineering
Airlogic Ltd.
Airnorth Engineering
Airwork limited
AJ Walter Aviation
Aker-Stord (Norway)
Alenia Aeronautica (Italy)
Alitalia
All Nippon Airways
All Nippon Airways Trading Co. Ltd.
Alstom Gas Turbines
American Airlines
American General Supplies
Amiri Flight
AmSafe Bridport
Angola Airlines
Aramco Overseas Company BV
ATC Lasham
Atlas Air
Atlas Jet (Turkey)
Australian High Commission
Austrian Airforce
Austrian Airlines
Aviation Spares
Avient Ltd.
Aviquipo Holland B.V.
Avtrade
Aylward Engineering & Pneumatics Ltd.
BAE Chester
BAE Dunsford
BAE Manchester
BAE Systems (Operations) Ltd.
BAE Warton
BAE Yorkshire
Bangkok Airways
BASCO
Belgium Airforce
Beta Glass Plc.
BH Air (Bulgaria)
Bjorge/EGT
Blackpool Transport
BMW - Rolls Royce
BNFL (Dungeness 'A' Power Station)
BNFL (Sellafield,Cumbria)
Boeing (US Army)
Brammer
Brazilian Navy
Bristow Helicopters Ltd
Britannia Airways
Britannia Airways (Sweden)
British Aerospace
British Airways
British Airways (Glasgow)
British Airways (Heathrow Airport)
British Hovercraft
British Hovercraft (Saudi Arabian Frontier Force)
British Midland International
Brunei Shell
Canadian Airforce
Cargolux
Carnival Airlines (USA)
Carribean Airlines
CCM Airlines
Charles Kendall Freight
CHC Ireland Ltd.
China Airlines
China Southern Airlines
Chip-Tech Ltd.
Comair Ltd.
Compass Airlines
Connex South Eastern
ConocoPhillips UK Ltd.
ContactServe (Pty) Ltd.
Continental Airlines
Copa Airlines Panama
CPG Logistics Ltd.
Cyprus Airlines
Cyprus Airways
Czech Airlines
Daimler Chrysler
Danish Air Force
Dasic International
DC Aviation GmbH
Deeside College
Defence Support international Ltd.
Delta Air Transport
DHL Air Ltd.
Direct Rail
Dresser Rand (UK) Ltd.
Dresser Rand Co. (USA)
Dutch Royal Air Force
Dutch Royal Navy
Eastern Generation
EgyptAir
Egyptair M&E
El Al Israel Airlines
Embraer Brasileira
Emerald Airways
Emirates Airline
Engine Alliance (GP7200 & GE's GEnx)
Enterprise Oil
Euralair Industries
Eurocypria Airlines
Europe Aviation
European Air Transport
European Gas Turbines
Eurowings (Germany)
Eva Air
Evergreen Aviation tech Corp. Taiwan
F.B.S. Ltd.
F.R. Aviation
FB Heliservices Ltd.
FedEx
FEL Avionics
Felix Airways
Ferguson Enterprises Inc.
FFV Aerotech
Field International Ltd. (Malabar)
Fields Aviation
FLS Aerospace
FLS Aerospace (Ireland)
FMV Sweden
Fonseca Matos & Ferreira Lda
FPM Technology
Froude Consine Ltd.
FSL Aerospace Ltd.
Fuji Dream Airlines
Futura Internac (Mallorca)
G.O.T. Ltd.
GAMCO - UAE
Garuda Indonesia
GE Aircraft Engine Services South Wales
GE Aviation Customer Tooling Solutions
GE Aviation USA
GE Engine Services International Inc.
GE Engine Services Malaysia
GE Greenwich Caledonian
GE Peebles Test Facility
GE Structured Services
Globalia Mantenimiento Aeronautico
GOL Transportes Aeroes S.A.
Goldtech Technologies (Israel)
GoT^{2}echnics
Gowrings Continental
Greenwich Caledonian
Grove Park Maintenance (London)
Gulf Helicopters Company
Hapag Lloyd
Hong Kong Aircraft Engineering Company Ltd.
Hunting Aviation
I.C.S.
I.E.M.A. (Portugal)
Iberia Lineas Aereas De Espana
Iberworld Airlines (Mallorca)
Iddon Hydraulic Ltd.
IHI Heavy Industries (Japan)
IMP Aerospace
Inter Airlines (Turkey)
Inter Appro (France)
Interjet
Inter-Nett Plain Sailing Cleaning Services
IQA Industrias Quimicas
Isle of Scilly Skybus Ltd.
Italian Army
JAL (Japan)
Jalux Europe Ltd.
Japan Airlines
Japan Transocean Air
JEA
Jet Airways (India) Ltd.
Jet Blue
Jet2.com
JIT Aviation USA
JorAMCo

Jordan Aircraft Maintenance
JVYS
Kellogg Brown & Root Ltd.
Kenya Airways
Keyford Precision Engineering (Frome) Ltd
Kingfisher Airlines
KLM
Korean Air
Kuwait Airways
Lan Airlines S.A.
Lauda Air
Libyan Airlines
Lincoln Turbine Ltd.
London Underground (Hammersmith)
London Underground (Jubilee Line)
London Underground (Stonebridge Park)
LOT Polish Airlines
Lufthansa (Frankfurt)
Lufthansa (Stuttgart)
Lufthansa Cityline GMBH
Lufthansa Technik Airmotive Ireland
Lufthansa Technik Budapest
Lufthansa Technik Philippines
MacLean Electrical
Magnox Electric Ltd.
Malaysian Air Force
Malaysian Navy
Mazoon International (Oman)
MESA (Portugal)
Mexicana Airlines
Middle East Airlines AirLiban (MEA)
Ministry of Defence
Ministry of Interior (State of Bahrain)
MNG Airlines Turkey
Monarch Aircraft Engineering
Monarch Airlines
MTU Maintenance (Berlin)
MyTravel
N.V. Sabena Technics BRU S.A.
Naganari Corporation (Malaysia)
National Air Service (NAS)
Nayak
North West Airlines (Snecma)
North West Airlines (Snecma) Mineapolis
North West Airlines (Snecma) Tampa
Norwegian Rail
Nova Airlines
Oman Air
Onur Air
Owl Aerospace
P & W America
Pacific Dynamics (Australia)
Pakistan International Airways
Pegasus Hava
Pequipmar
Power Ring Technology (Hong Kong) Ltd.
Prime Aerospace PTE Ltd.
Qantas Airways
Qatar Airways
Qatar Petroleum Development Co. Ltd.
Qualitair
R.A.N. Australia
RAAF
RAF
RAF Benson
Regional Compagnie Aerienne Europeen
Regional Railways
Regional Railways (Leeds)
Regional Railways (Norwich)
Repaircraft plc.
Rhinestahl Corporation
RNLAF
Rolls Royce (Derby,England)
Rolls Royce (North America)
Rossiya Russian Airlines
Royal Air Force of Oman
Royal Air Maroc
Royal Jordanian
Royal Navy (Prestwick)
Royal Navy (UK)
Royal Netherlands Navy
Royal Norwegian Air Force
Ryanair
Saab Aerotech
Sabena
Safair (Pty) Ltd
Saga Airlines
Sahara Airlines
Saudi Airlines
Schreiner & Co. (AD-S & Co. b.v.)
Schreiner Airways
Scott Aerospace Ltd.
Serck Intertruck
Shannon Aerospace
Shenzhen Airlines
Sichuan Snecma China
Siemens
Singapore Airlines
Skymark Airlines Inc. (Japan)
Slovak Airlines
Snecma Moteurs
Snecma Services (CFMI Factory)
Snecma Services (Transavia)
Snecma Services France
Snecma Services North America
South African Airways
South West Trains (Fratton Traincare)
South West Trains (Salisbury)
Specialist Technologies Ltd.
SR Technics Ireland Ltd.
Sri Lanka Air Force
ST Aerospace (Singapore)
ST Aviation Services Co. Pte Ltd.
Standard Aero Ltd.
Sun Country Airlines
Sunstate Airlines
T&E Co. Ltd. (Japan)
Tam Linhas Aereas SA
TAP Portugal
Thai Airways
Trafficair
Transavia
TUI Airlines
Tunisair
Turkish Air Force
Turkish Airlines
UAE
United Arab Emirates Air Force
US Airways
Varig Airlines (Brasil)
Vernair
Vietnam Airlines
Virgin Atlantic Airways
VivaAerobus
VT Aerospace
VT Shipbuilding
Vulcan Operating Company
Wencor West Inc.
West Coast Train Care
West Jet (Calgary Canada)
Westland Helicopters
Westland Transmission
Westley Aircraft
Wideroe
Wizz Air Hungary KFT
WM Airline Services
Wood Group Gas Turbines
Yemen Airways (Yemenia)

If you have Juniper equipment, and don't see your name in this list, please get in touch!

The Juniper range of short engine probes are available to fit most engine types. We also produce long probes for those occasions when it's more convenient to engine wash with the thrust reverser doors closed. Below is a full list of probes (the long probes are on the shaded background) together with part numbers, engines covered and a generic fitment guide. Each Juniper part number refers to a set of two probes.

Aircraft Type	Engine Probes	Juniper Part Number
Boeing 737-300-400	CFM56-3	JMP/CFM56/D/4538
Airbus A320 RE-Engined DC8, AWACS	CFM56-2 & 5A	JMP/CFM56/D/4435
Airbus A321	CFM56-5B (Long Probes Thrust Reversers closed) 89"	JMP/CFM56/D/6527
Airbus A320, A340	CFM56-5B/C	JMP/CFM56/D/4605
Boeing 737-700/800	CFM56-7	JMP/CFM56/D/4462
Boeing 737-700/800	CFM56-7B (Long Probes Thrust Reversers closed)	JMP/CFM56/D/6645
* Sukhoi Superjet 100	SaM 146	JMP/SaM146/D/6797
(MDC)DC-10-30	CF6-50	JMP/CF6/D/4966
(MDC)DC-10-10/DC-10-30	CF6-6D/6K/-50	JMP/CF6/D/4510
Boeing 747/767	CF6-80C2	JMP/CF6/D/4037
(MDC)MD-11, Airbus A300, A310	CF6-80C2 D1F/A5F/A5/A3	JMP/CF6/D/6418
Airbus A310	CF6-80A2/A3	JMP/CF6/D/4247
Boeing 747/767 Airbus A330-200 (MDC)MD-11 Airbus A300-600F Airbus A310-200F	CF6-80C2 CF6-80E1 CF6-80C2 D1F CF6-80C2 A5F CF6-80C2 A3 (Long Probes Thrust Reversers closed) 98"	JMP/CF6/D/6511
Airbus A330	CF6-80E1	JMP/CF6/D/4947
Boeing 777	GE90 (Short Probes)	JMP/GE90/D/4081
Boeing 777	GE90 (Long Probes Thrust Reversers closed) 127½	JMP/GE90/D/4599
Boeing 777-300ER	GE90-115B (Short Probes)	JMP/GE90-115B/D/4949
Boeing 777-300ER	GE90-115B (Long Probes Thrust Reversers closed)135"	JMP/GE90-115B/D/4948
* Boeing 787	GEnx	JMP/GEnx/D/6783
* Boeing 787	GEnx (Long Probes Thrust Reversers closed)	JMP/GEnx/D/6698
Embraer 170 & 175 Bombardier CRJ700, CRJ900, CRJ1000 Bombardier Challenger, 870, 890	CF34-8C/E	JMP/CF34/D/6553
Embraer 190 & 195	CF34-10E	JMP/CF34/D/6000
Boeing 757	RB211-535E4	JMP/RB211/D/4153
Boeing 747-400	RB211-524 G&H Long Probes 178"	JMP/RB211/D/4249
Airbus A320	V2500	JMP/V2500/D/4040
Airbus A320	V2500 (Long Probes Thrust Reversers closed)160"	JMP/V2500/D/6561

(MDC)MD-90	V2525 D5	JMP/V2500/D/4703/MD
(MDC)MD-90	V2525 D5 (Long Probes Thrust Reversers closed)	JMP/V2500/D/6562/MD
Airbus A340-600	TRENT 500	JMP/TRENT/D/6188
Airbus A340-600	TRENT 500 (Long Probes Thrust Reversers closed)	JMP/TRENT/D/6615
Airbus A330	TRENT 772	JMP/TRENT/D/4702
* Airbus A330	TRENT 772 (Long Probes Thrust Reversers closed)185”	JMP/TRENT/D/6592
Boeing 777-200ER	TRENT 800	JMP/TRENT/D/6328
Airbus A380-800/900	TRENT 900 (Long Probes Thrust Reversers closed)133”	JMP/TRENT/D/6776
Boeing 787	TRENT 1000 (Long Probes Thrust Reversers closed)	JMP/TRENT/D/6754
Boeing 767-200/300 Airbus A300/A310,(MDC)MD-11	P & W 4000-94” Fan (PW 4152/4158/4462)	JMP/PW4000/D/4856
Boeing 767-300 Airbus A300/A310,(MDC)MD-11 Boeing 747-400	P & W 4000-94”Fan (Long Probes Thrust Reversers closed) 85”	JMP/PW4000/D/6601
Airbus A330/200/300	P & W 4000-100”Fan	JMP/PW4000/D/6216
* Boeing 777-200	P & W 4077-112”Fan (Long Probes Thrust Reversers closed)	JMP/PW4000/D/6728
(MDC)MD-83	P & W JT8D-219 (Long Probes Thrust Reversers closed) 201”	JMP/JT8D/D/6627
Boeing 747-200	P & W JT9D	JMP/JT9D/D/4154
BAE 146, RJ70/100	Allied Signal LF507	JMP/LF507/D/4809
Ilyushin IL96	PERM PS-90A 185”	JMP/PERM/D/6581

* Denotes probes in development

Juniper short probes - generic fitting instructions

Engine Preparation - Refer to appropriate Aircraft Maintenance Manual.

Open left and right thrust reversers on the engine to be washed in accordance with the instructions detailed in the appropriate AMM.

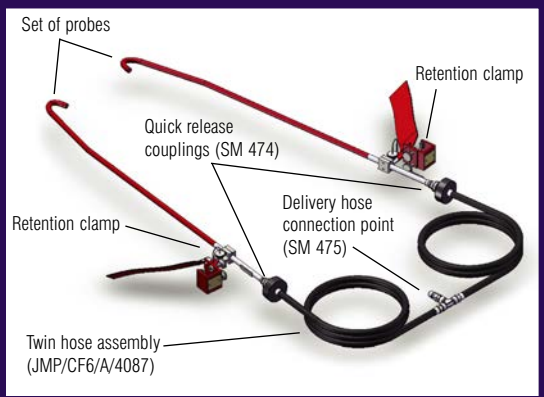
CAUTION: Ensure the engine fan is held securely during the fitting of the engine probes.

Attach the engine probe retention clamps to the fan reverser inner or outer support ring. Generally, for smaller fan engines (such as the CFM) this will be in the 10.00 and 2.00 o’clock positions, and for larger fan engines (such as the CF6) in the 8.00 and 4.00 positions, aft looking forward. Guide the probes through the fan outlet guide vanes (OGV’s) from the aft end at locations adjacent to the retention clamps, locating them over the booster/fan splitter so that the nozzles point between the booster inlet guide vanes into the booster.

Put each probe aft mount on the probe retention clamp screw and fit the retention knobs.

Adjust each probe aft mount to hold the probes safely in place using the allen key provided. Connect the twin hose assembly (provided) to both of the engine probes whilst holding the probes securely to avoid movement, making sure that the probes are attached securely to the engine with the hoses attached. Connect delivery hose from the wash rig to the twin hose assembly. Probe installation is now complete.

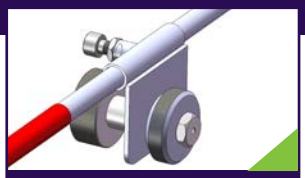
CAUTION: Check that probe nozzles are clear of the back of the fan.



The twin hose assembly connected to the probes.

The Juniper short probe range

Full range illustrated. Shown here are the locking mechanisms, together with part numbers, probe length and the engine types they were designed for.



CFM56-3
JMP/CFM56/D/4538 - length 36″

CFM56-2 & 5A
JMP/CFM56/D/4435 - length 35″

CFM56-5B/C
JMP/CFM56/D/4605 - length 36″

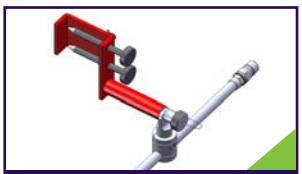
CFM56-7
JMP/CFM56/D/4462 - length 34″

SaM 146
JMP/SaM146/D/6797 - length 31″

CF6-50
JMP/CF6/D/4966 - length 41″

CF6-6D/6K/-50
JMP/CF6/D/4510 - length 26″

CF6-80C2
JMP/CF6/D/4037 - length 37″



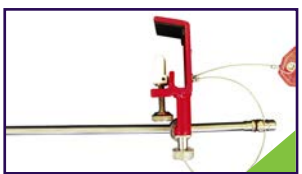
CF6-80C2 D1F/A5F/A5/A3
JMP/CF6/D/6418 - length 39″

CF6-80A2/A3
JMP/CF6/D/4247 - length 42″

CF6-80E1
JMP/CF6/D/4947 - length 38″

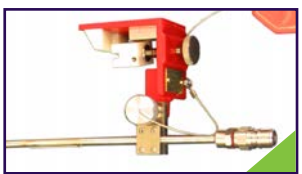
GE90
JMP/GE90/D/4081 - length 49″

GE90-115B
JMP/GE90-115B/D/4949 - length 54″



GEnx
JMP/GEnx/D/6783 - length 58″

CF34-8C/E
JMP/CF34/D/6553 - length 12″



CF34-10E
JMP/CF34/D/6000 - length 33″

RB211-535E4
JMP/RB211/D/4153 - length 45″

V2500 A1/A5
JMP/V2500/D/4040 - length 36″

V2525 D5
JMP/V2500/D/4703/MD - length 46″

TRENT 500
JMP/TRENT/D/6188 - length 45″

TRENT 772
JMP/TRENT/D/4702 - length 43″

TRENT 800
JMP/TRENT/D/6328 - length 53″

P&W 4000 94″ fan
JMP/PW4000/D/4856 - length 37″

P&W 4000 100″ fan
JMP/PW4000/D/6216 - length 45″

P&W JT9D
JMP/JT9D/D/4154 - length 55″

Juniper short probes have been developed for the following engine groups:

GE - CFM56, CF6, GE90, GEnx, CF34

PowerJet - SaM 146

Rolls Royce - RB211, V2500, TRENT

P&W - 4000, JT9D

It's shower time...!

Artist, writer and poet Stephen Corless in a previous life was Senior Support Engineer for Three Squadron looking after Harrier GR3's on deployment with British Forces along the Rhine in the early seventies. Stephen has written a series of books about his adventures and recounts in his latest 'Erk's 'Ardlife add Astra - Die Deutche Datien (The german Files)', one of the more unusual applications for a Juniper Mk2 Fluid Replenishment Rig - a very versatile piece of kit...!

Stephen recalls getting a well earned break after crawling into the Harrier's hot engine in sweltering conditions to replace a temperature probe due to erroneous EGT readings. In his words: "*Breathing a huge sigh of relief, I borrowed John Cabley's old modified Juniper rig and had a makeshift shower under the trees. With a change of clothes I felt better than I'd done for days and was ready for anything*".

So, if you feel in need of a quick shower, please get in touch...!

To find out more about Stephen's work, why not visit his website:
www.pie-eater.co.uk

GM/D/5317 Air Ministry Ref: 4G/1047569 NATO Stock No. 4930-99-1047569

So, why should I use Juniper...?

Q. ***We know that regular engine washing is essential, but why buy a washing rig when I can just book a service wash?***

A. You can pay upwards of $5000 to service wash just one engine. For just eight of these washes you can own a Juniper rig and tooling outright.

Q. ***Yes, but then I'm saddled with the maintenance and servicing of this equipment - all additional costs.***

A. Juniper equipment is engineered using very few moving parts with, therefore, less to go wrong. We have built up a hard earned reputation for manufacturing quality and reliability since we started designing and building these rigs in 1964, and we can still source replacement parts for any rig we've made.

Q. ***What about the convenience of just picking up the phone and booking someone to do an engine wash for you?***

A. What could be more convenient than being able to use your own equipment whenever and wherever you need it? Juniper rigs are robust, compact and maneuverable. They are also totally self contained for those inaccessible parts of the airfield or the occasions when hangar facilities aren't available.

Q. ***OK, but then I've got to train staff how to use it...***

A. Juniper rigs are very simple to operate and we consider training and commissioning for any new rig to be a vital part of the service we offer here. Should training be required, we will make sure that your staff are comfortable with its operation. Anyway, all rigs are supplied with a comprehensive instruction manual and parts list and we are always available for help and advice if needed.

Q ***If I book a service wash I know that any waste water collected will be disposed of safely. What does Juniper offer?***

A. We now have our own waste water collection system consisting of a collection mat mounted on a maneuverable trolley fitted with a powerful vacuum unit and 85 gallon storage tank. For more information on this, see the cover story in this newsletter.

SAAB chooses Juniper

When Customer Alliance Solutions, a division of SAAB tasked with the maintenance of the Swedish Coast Guard fleet of three Dash8 Q300 aircraft, needed a small, robust and maneuverable washing rig, they approached Juniper late in 2009 to supply one of our 68ltr. mobile compressor washing rigs **(JMP/T800/D/4796/C500)** fitted with a special delivery hose adaptor **(JMP/PW/D/6798)** for use with the P&W 100 series of turboprop engines.

These three aircraft are some of the most advanced MSA's (Marine Surveillance Aircraft) in operation at the moment, and as one of them was being sent to assist the Greek Coast Guard in monitoring the maritime border between Greece and Turkey almost immediately, we offered to lend them a smaller 19ltr wash rig **(JMP/CWR/D/6828)** until theirs was ready.

The offer was gratefully accepted and this smaller rig proved so versatile and useful that they ended up keeping it as well as the rig originally ordered. Another happy customer!

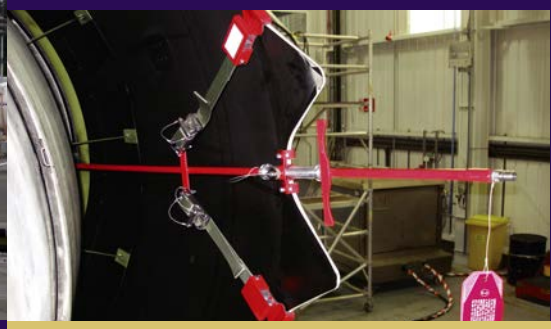
JMP/T800/D/4796/C500 | JMP/CWR/D/6828 ▲

A 'dream' job for our new wash probes

Rolls Royce have bought three sets of our newly developed TRENT 1000 long probes **(JMP/TRENT/D/6754)** designed specifically for the TRENT 1000 engines powering the new Boeing 787 'Dreamliner' aircraft.

The probes are being used in Rolls Royce engine test beds, with one set remaining at the Rolls Royce Development Centre in Derby, England, while another set will be used by ANA in Japan. The third set is with Boeing in Seattle from where the Dreamliner made it's successful three hour maiden flight on the 15th December 2009.

The Boeing 787 Dreamliner in Seattle



JMP/TRENT/D/6754 ▲

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