

HOW TO USE YOUR

# ELECTRICALLY HEATED

## FLYING CLOTHING

(Army Air Forces Type F-3)



### WARMTH BY WIRE



Contained herein are the simple, practical rules for Use and Care of the AAF TYPE F-3 Electrically Heated Flying Suit Assembly manufactured by the General Electric Company (indicated on the label of each jacket, trouser, glove and shoe). For detailed technical data, refer to Official Technical Order No. 13-1-16

# Do and Don't Dep't.


From the actual experience of countless pilots, gunners, bombardiers and navigators comes a good set of rules to follow, on the use and care of electrically heated clothing.


After you get dressed in the heated suit assembly  and are waiting to take your place in the plane, don't monkey around unnecessarily . Take it easy! Don't work

up a sweat! Your suit is not built for rough use. Baseball , Football  and Track Meets  are good exercise, but not good for your F-3 Suit assembly!


Don't use the gloves for heavy work . The heated shoes are not for long hikes  and the suit is for flying,


not for strolling around in  no matter how cute your girl thinks you look. Another thing, take the suit off

immediately after each flight and hang it carefully  in a safe place, where it will dry out. And look, Mister,

Try to keep spots and stains off your suit. 


Watch where you sit; don't use the sleeves to clean off the motor and oil lines. When you answer mess call, sit right up to the table... mind your manners and don't slobber. Get your suit

dry cleaned  at the slightest sign of soil or similar stuff. Be sure your gloves and shoes are securely connected

to your suit  at all times during operation. To prevent over-


loading the batteries, don't turn suit on before take-off, but

don't wait too long after take-off or you'll ride cold. Conversely,

don't ride hot  or you'll get the "Cold sweats"


 at higher altitudes. Never plug into 110 Volts .

Your suit, gloves and shoes are built to take a gentle 24-30 volts so

stay out of the 110 volt dept. if you don't want a hot foot 

or a blown fuse . Anyhow, it's liable to ruin the whole suit

assembly. And for pity's sake, don't attempt to make repairs

on your suit  without the proper "know how."

Get yourself a copy of the Official Technical Order No. 13-1-16 or,  
better yet, if your suit becomes damaged or inoperative,  
get a new one.

## WARNING TO NAVIGATORS

Electrically heated suits will affect direct reading aircraft compasses principally because of the single-wire direct-current supply on which these suits are operated. Before taking off on a mission on which electrically heated suits will be used, the navigator should swing the aircraft compass with all electric circuits and all suits, except his own, switch on. It is essential that he turn off his own suit before reading the compass. This can be accomplished by turning the rheostat to the "off" position or by merely pulling the connector from the extension cord socket. Electrically heated suits do not affect remote reading compasses.

**Do not plug suit, gloves or shoes  
into 110-volt circuit**

G-E Form No. MAQ 207, Instructions for Type F-3 Electrically Heated Flying Suit Specification No. 3211.

Prepared and Published by

**GENERAL  ELECTRIC**

Pioneer Products Division, Bridgeport, Connecticut

For the Army Air Forces, Flying Clothing Branch,  
Material Command, Wright Field,  
Dayton, Ohio

Best thing you can do is to give your heated flying clothing the kind of care and attention that will keep it in tip-top condition. Wear it only on flights and don't forget about regular inspections. It is not necessary to disconnect and carry with you, the six-foot extension cord used in the plane. Leave the darn thing in the plane. Its twist lock will keep it securely connected to the receptacle in the rheostat.

## A Few F-3 Facts for Flyers



**K**EEP in mind that your F-3 electrically heated flying suit is more than just an issue of equipment . . . more than just an assembly of clothing. It's your best safeguard and protection against a really rugged enemy . . . Ole Man Frostbite.

Always wear the F-3 suit as a complete matching ensemble as recommended and stick to the routine as set forth in these instructions.

If, for some reason, S-4 hasn't caught up with you in the matter of Alpaca trousers (type A-9) and Alpaca jacket (type B-10) and you have to resort to heavier outer clothing, be sure to wear extra wool socks and bring along some more mittens. Added body insulation requires extra insulation for hands and feet in order to maintain heat balance.

You can rely on your F-3 electrically heated suit to keep you cozy all up and down the altimeter. It's designed to do a good job of keeping you warm at minus 40 degrees F at sea level which oftentimes feels more severe than minus 60 degrees F upstairs in the region of the "strat." So you see, the F-3 can be counted on to keep you comfy down to minus 60 degrees F. Which is probably lower than you'll ever go.

This . . . you will like. The F-3 Suit gives you maximum wear and service under all normal conditions. Each shoe, each glove, the jacket and the trousers are designed to operate independently. If one of these units should fail due to damage, excess wear or abuse, the rest of the suit will still operate.

For your added protection, there are two electrical circuits built in each shoe, glove, trouser and jacket so that only one half the heat is lost in any one unit if one of the circuits in that unit should break.

# Six Simple Steps



**Step One . . .** Let's start with the bare facts and to them add long underwear and wool socks. The long underwear will help absorb perspiration which can be dangerous to the body at extreme cold. Don't work up a sweat while dressing. Now put on your regulation G. I. trousers and wool shirt.



**Step Two . . .** Put on F-3 electrically heated trousers. Adjust the shoulder straps to fit comfortably. Don't draw the straps too tightly or they'll "bind." Your F-3 heated jacket goes on next. Connect the cord on the right underside of the jacket to the plug-in receptacle at the waistline of the trousers. Make sure *both* prongs of plug are inserted in receptacle. Check size of heated trousers and jacket to be sure you have freedom of movement. It should not be too snug; nor should it be too bulky. Get a size suit that fits you to a "T."



**Step Three . . .** The heated shoe inserts come next. These are the standard type F-2 (for both F-2 and F-3 suits) that's why they look so familiar. Connect the snap fasteners on each leg of the heated trousers to the corresponding snaps on each shoe insert. Positive connection of both tab fasteners is highly important to the correct operation of the heated suit. Check and double-check. Don't put on your outer boots just yet . . . Be patient!



RIGHT    WRONG



**Step Four . . .** Over the wired F-3 trousers, put on the type A-9 Alpaca-lined trousers. Reach in the right or left side pocket-opening and pull through the electrical cord or "pig-tail." (Right or left according to the location of the heated clothing rheostat and your normal station in the plane.) Add the Alpaca-lined Type B-10 Jacket.



**Step Five . . .** Here is where you put on the finishing touches. Outer boots; regulation helmet; a light wool or silk scarf to seal junction at the neckline between helmet and jacket collar. Connect six-foot lead cord to pig-tail.

# to Solid Comfort



**Step Six . . .** At this point, stop and give everything a final check up; for it's time now to add gloves. First, the light-weight rayon or silk gloves; next, the standard type F-2 heated gloves. Snap the tabs on the sleeves of the heated jacket to the corresponding snaps inside the gauntlets of the electrically heated gloves. Now, put on the heated gloves; and take a pair of A-9 or A-12 mittens along . . . just in case.

## HOW TO OPERATE THE HEATED FLYING SUIT



Actually the instructions for operating the F-3 Heated Suit Assembly are simple. All you have to do is be careful to follow 'em to the letter.

Near your position in the plane, you will find a built-in rheostat (Type Q 1A) with receptacle at the left for plugging in your six-foot extension cord. The plug at the end of this extension cord should be securely

and positively inserted in the left receptacle of the rheostat and locked into position with a simple clockwise twist.

The amount of heat required can be adjusted by turning the rheostat to the correct position. For maximum comfort during a complete flight, the rheostat should be adjusted to furnish a minimum of heat, not an excess. Do not "ride-hot" as perspiration produced at normal temperature levels will result in an unpleasant chill when the lower temperatures of higher altitudes are reached. (Sounds nuts, don't it. But read it over again . . . it makes sense!)

A connecting block for electrically heated goggles or oxygen mask heater will be found on the right front bib of the heated trousers.

The heated trousers and jacket are wired so that heat will be evenly distributed over the entire body. It's a good idea to give the heated portions of your suit a regular check-up and inspection after each flight. Look for excessive wear at all flexion points where breakage of the fine electric wires with which this apparel is wired might occur.

If an ohmmeter is available, check the resistance of your electrically heated apparel at frequent intervals, and flex each item while conducting this test. (The resistance in ohms is marked on each shoe and glove; trouser and jacket.) If the ohmmeter registers a variance of more than 10 per cent of the resistance as indicated, then turn in the item for a new one.

# Enjoy That Free and Easy Feeling!



**SOLID COMFORT**



**EASE OF MOVEMENT**



**QUICK, FLEXIBLE ACTION  
IN ALL DIRECTIONS**



**COMFORTABLE  
AT NORMAL  
OR EXTREME  
TEMPERATURES**

**NO BULKINESS**



**E**LECTRICALLY heated flying clothing is scientifically designed and carefully styled for the flyer's *personal comfort and safety*. The Type F-3 Flying Suit Assembly for the Army Air Forces combines the best in quality materials, precision engineering and durable construction.

You will find that the component parts of the Army Air Forces Electrically Heated Flying Suit manufactured by one company may be interchanged with parts of a suit manufactured by any other company. For best results, however, it is wise to use the complete suit as manufactured by one company.

The Electrically Heated Suit Assembly is designed to maintain top body efficiency of the wearer during routine flight, training or combat flying for all temperature conditions to 40 degrees F. below zero regardless of the time duration of the flight.

# Here's Your Complete High-flying Wardrobe



1. Long Underwear
2. Regulation Socks (wool)
3. Trousers (Regulation G 1)
4. Shirt (Regulation G 1)
5. Trousers, Heated Type F-3
6. Jacket, Heated Type F-3
7. Trousers (Alpaca lined, type A-9)
8. Jacket (Alpaca lined, type B-10)

9. Shoe Inserts, Heated Type F-2
10. Shoes, outer felt or Type A-6
11. Gloves, rayon or silk
12. Gloves, Heated Type F-2
13. Mittens, Type A-9
14. Scarf
15. Helmet
16. Lead Cord